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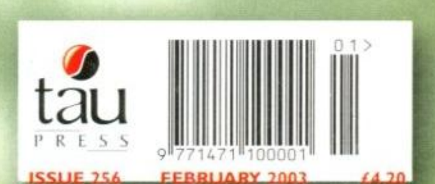
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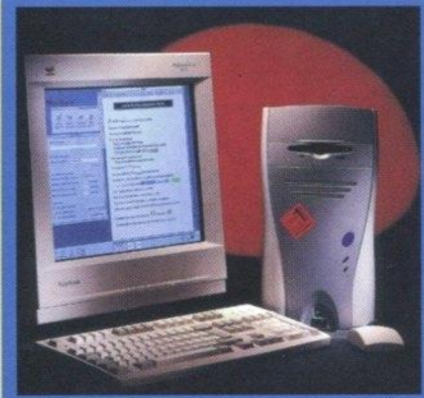
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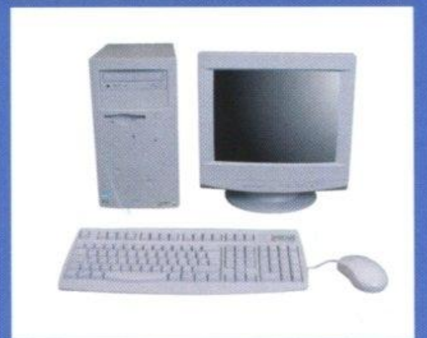
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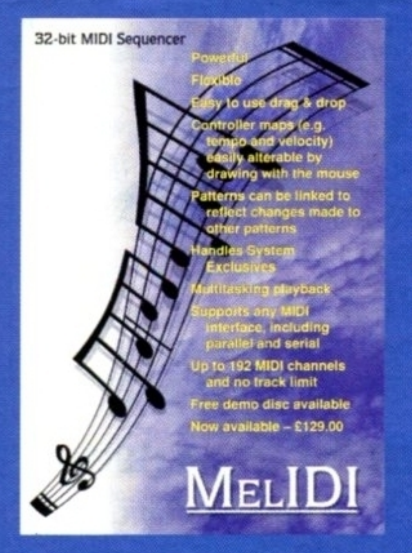


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These machines have mainly come from schools and businesses. As such there are various brandings, labels, markings, scratches, very occassional broken bits (e.g. front flaps) on the cases. All machines have been generally cleaned and air dusted inside to get rid of most of the dust, however the cases have not been meticulously cleaned as this would take a long time and increase the prices considerably. Any machines which have PC cards are usually 486 cards, but as these are basically worthless, their value has not been taken into account (and they might not have all the software on the disc to work them anyway).

Get free carriage if you also take a monitor (the 'b' indicates an additional £10 carriage charge). Keyboard, mouse and mains cable included. Single slice machines do not have backplanes unless specified; two slice machines have four slot backplanes. Ethernet cards etc. can be taken out if not required. There is a three month warranty on these machines and they are supplied 'as seen', so to speak. All details are subject to change and please check availability before ordering. A7000(+) machines are also available – please ask for details.

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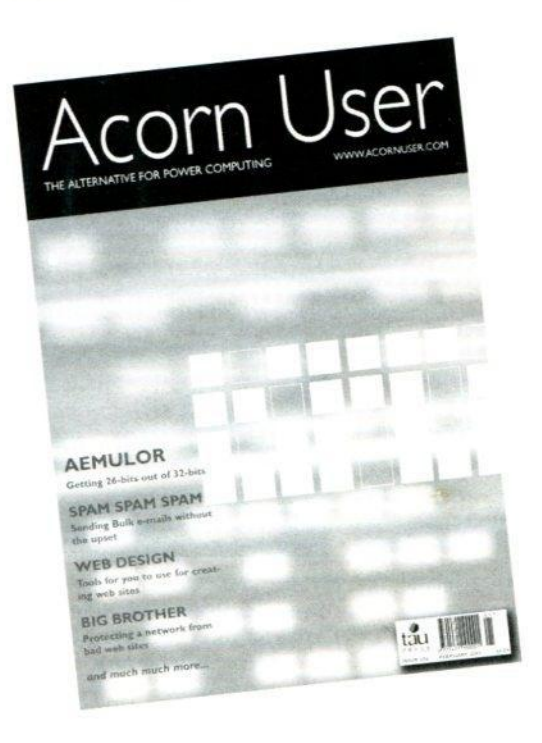









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Editor's Comment

There is a derogatory statement regarding the ability of certain individuals to organise a very enjoyable party in an establishment that brews beer.

This inability is something which can be found in a wide range of individuals and is not limited to any particular type, it can be considered cute in certain types of the human species but is never respected.

And it is something that cannot be tolerated in business, the difference in business, of course, is that people pay you money to come to your party. And running a business is the process of arranging these very enjoyable parties on a regular basis usually with insufficient resources and if they aren't enjoyed you don't get the chance to arrange them any more, because people stop coming and they don't pay.

But it can be worse than that, sometimes in business you get an organiser who is really keen on putting these parties together: and perhaps they know plenty of people who want to come, people who are very willing and tolerant, who want to have a good time and will even put up with not having a good time occasionally.

But for some reason the organiser has someone on the crew who isn't a team player. Someone who, for one reason or another, while seeming totally credible and perhaps even seemingly helpful is forever stabbing them in the back. Forgetting important things, not sending the invitations, undercooking the prawns for the salad, or whatever.

And so a would-be organiser works his little cotton socks off, and gets nowhere. In fact goes backwards, works themselves almost into the grave, wondering all the while, why isn't it working? Why do things seem to be getting worse. Never realising the truth. It can be a sad world.

There are other difficulties in the party organisation game, there are the ones who are always preparing for that really really great party, but spend so much time perfecting that it never happens. The ones who think they have a great idea for a party but never check to see if any potential guests are interested.

The ability to organise an enjoyable party is far more than just that. It involves teamwork and the ability to actually see where and when the party should take place. Then getting the show on the road and actually doing it. There are so many ways it can go wrong.

But get it right and everyone can have a really great time.

Rob Donaldson

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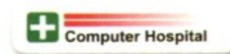
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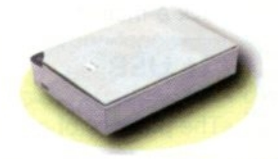
was £169.00 now £143.83

Basic Model	£143.83	£169.00
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8 MB Machine with 1/2 VGA Screen Built in WP, SS, Diary, Sketch, Jotter, Spellcheck and Internet WWW and E-mail s/w. Psion © Compatable.

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Internet Packs from **£85 + VAT (£99.88)** available for all machines include Internet software, ISP setup and 56K modem

New Year Iyonix offers from Castle

In tradition with the January sales, Castle have released a lower-specification Iyonix PC at reduced priced for a limited time only.

The new system comes with 40GB hard drive, 52x speed CD-ROM drive, 128MB of DDR RAM, and a USB to parallel printer cable all for just £1249 inc VAT (delivery is extra).

The launch model of the Iyonix PC with an 80GB hard drive, 128MB DDR RAM and 48x speed CD burner is still available at £1299 inc VAT although is now bundled with a USB to parallel printer cable during the sale. There will be more opportunities to see the Iyonix in action at the RISC OS South West show later this month and at various user groups around the country (see user group meetings in these pages for details)

To accompany the Iyonix sale, Castle has also reduced prices on a number of monitors and peripherals. Iiyama monitor prices have been reduced by up to £206 and Ultra slim 17" LCD monitors start from just £399 inc VAT.

Castle are now selling the new Canon BJS i550 colour bubblejet printer for £128. This printer offers resolutions up to 4800x1200dpi (using PC drivers, 600dpi for RISC OS use) and is fitted with both USB and parallel ports. Suitable for both the Iyonix PC and other RISC OS or PC computers it includes suitable software driver and data cables.

More information at **www.iyonix.com/orders** The New Year offer prices expire on 28th Feb 2003.

Castle Technology has also published additional material on their Web site to enable developers and programmers to write software for the all-new 32-bit Iyonix PC. The latest technical documentation is now available at www.iyonix.com/32bit/ and includes:

- Full details on converting ARM code to 32-bit
- PCI Manager APIs to enable developers to use PCI cards
- CDFS driver details
- API changes to make APIs 32-bit compatible
- Filecore changes to use 32-bit APIs and to support larger discs
- UCS Fonts
- Hardware Abstraction Layer
- Keyboard labeling
- Help system
- New features in RISC OS 5

The site also provides a new CallASWI module (version 0.03) which allows developers to use four new SWIs introduced in RISC OS 5 on older, 26-bit versions of RISC OS. These SWIs are: OS_LeaveOS (&7C), OS_ReadLine32 (&7D), OS_SubstituteArgs32 (&7E) and OS_HeapSort32 (&7F). This simplifies coding as developers don't need to support both old and new APIs in their software.

Castle's latest version of the Acorn C/C++ Development Environment is still available, but now priced at its usual price of £199 inc VAT

Wireless Networking

Want to connect your Risc PC into your home network but without wiring up your house? Well, Stuart Tyrrell Developments now allow you to do this with their wireless networking devices for RISC OS and Windows PCs.

There are several new pieces of hardware available, which allow you to network your computers together using 80211.b wireless networking.

Wireless USB adaptor

The wireless USB adaptor enables users who own the Simtec USB card to connect their machine to a new or existing wireless network. The device simply plugs into the USB card like any other USB device, and comes complete with a RISC OS configuration program and drivers.

The Wireless USB adaptor inc RISC OS drivers is priced at £79.95 inc VAT and carriage.

A Wireless USB adaptor for PC (no RISC OS drivers) is £69.95 inc VAT and carriage.

Most of those using older Risc PCs will also require the Simtec USB card which adds £99.95 inc VAT making it a costly alternative to plain cable-based networking, which can be achieved for just over £100.

A Wireless PCMCIA card (for use with PC portables) can also be purchased for £59.95 inc VAT and carriage.

For those with an existing home network, Stuart is also selling a multi-purpose piece of hardware called a Wireless Access point / Bridge / Media Converter. This hardware could also be used by Iyonix PC owners, who already have built-in cable-based networking, and need something to "bridge the gap" between cables and wireless.

This versatile device, primarily an access point and interface between wired and wireless networks may also be configured as a bridging access point (enabling a number of wired networks to be linked wirelessly), and as a media converter (enabling a single machine fitted with a network card to communicate with a wireless network).

The Wireless Access point / Bridge / Media Converter is £99.95 inc VAT and carriage. All wireless products operate at up to 11Mbps and support 128-bit WEP encryption.

Contact:
Stuart Tyrrell Developments
PO Box 183
OLDHAM
OL2 8FB
Phone: 0845 458 8803 / 01706 848 600
Fax: 0870 164 1604
email: info@stdevel.co.uk
web: http://www.stdevel.co.uk

New home for Clares

APDL and ProAction Software have recently taken over Clares Micro Supplies entire range of current RISC OS products; including Schema, Composition and Rhapsody 4. They have promised to look at each product with regards to possibilities for the future, and are dropping the prices on the majority of the products.

The first product to be updated and reduced in price is Rhapsody 4. Version 4 is the latest of the Rhapsody series of music notation applications for playing, recording and printing music. Music can be input manually by dragging notes onto staves or with the addition of a MIDI card and MIDI keyboard you can play a tune and Rhapsody will capture it to then place the notes on the staves automatically.

A selection of Rhapsody 4 features include :

- Guitar Chords
- Quick edit panel
- Wide range of symbols including rehearsal letters, da capo, tremolo, grace notes, spread chords, and so on
- Hairpins and phrasing
- Outline font used for all display and printing
- Different note styles - cue parts, percussion, etc
- Automatic bar checking
- Different individual stave sizes and types
- Sophisticated transcribe options
- Formatting of selected staves
- Save pages as Draw files

• Can load and save MIDI files (type 0 or 1)

• Supports bank change messages

Plus you can insert MIDI commands into the score.

Requires at least 4Mb RAM and an ARM 3 (although an A7000 or Risc PC is strongly recommended). MIDI functionality on offer is considerably more sophisticated than earlier versions, and you are no longer limited to 128 MIDI voices and can add controller or other MIDI information anywhere in the score.

The launch price from APDL and ProAction is £29.90 inc VAT and postage within the UK, which is a 50% reduction on the previous selling price. Rhapsody 4 is supplied on CD-ROM, so if you require a floppy disc version please specify when ordering.

Contact APDL on 020 8778 2659, email info@apdl.co.uk or write to APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN for further details.

TEK Pyro Update released

After many months of hard work, Artex is proud to present the "PYRO Update" for their realtime strategy game "TEK1608". The Pyro update can be downloaded for free from **www.artexsoft.com** New features include:

- Enhanced missile system
- Enhanced laser system
- Wayfinder rewritten from scratch
- AI improved
- Smooth 'fog of war'
- Stability improved

Aemulor released

For those lucky enough to have an Iyonix PC; Aemulor, the software that enables you to run many of your 26-bit software is now available.

The initial version is priced at £50+VAT, with a "pro" version planned for later in the year which will offer much higher performance and compatibility for applications (such as Sibelius) which use screen modes not ordinarily available on the Iyonix PC.

The Aemulor Web site contains details of applications which are known to run, and fail, under Aemulor. A selection of those currently listed as compatible are: Impression Style, Impression Publisher, WorraCAD, Zap, StrongEd, Photodesk, Hard disc companion, Eureka, ProTracker, RiscPCB, Fresco, Personal Accounts, FontFX, Typestudio, DrawPlus, Poster, ProArtisan 2, and many more.

Some applications which are known not to work are : ProCAD, Studio24Pro, SparkFS, CFS and TopModel 2. The Aemulor team hopes to improve the compatibility over the coming months, and will offer free upgrades when improved versions are released. There will also be an upgrade path from the basic to the pro version when available later in the year.

Aemulor is available either direct from the Aemulor Web site, or from your local RISC OS dealer.

www.aemulor.com

Wakefield 2003 on the road

The Wakefield RISCOS Computer Club are to run another show in 2003. The hugely popular northern RISC OS show will be on Saturday, 10th May 2003, and open to the public between 10 am and 4:30 pm.

It has been decided to run only a one day event this time, due to the lower attendances on the Sunday in the past, and to reduce the additional costs to exhibitors attending a two day show. The venue will be as in previous years, the Thornes Park Athletic Stadium.

The usual features such as show theatre and charity stall will be present, although this year everything must go by the end of the day, so there should be some real bargains to be had.

Tickets will cost £5 (under 16's will be free if accompanied by an adult) available on the door.

Visit the show website to be kept up-to-date with all the latest news and exhibitors.

www.wakefieldshow.org.uk

WROCC acknowledge the support of their principal sponsors this year : R-Comp/R-Comp Interactive, Stuart Tyrrell Developments and Spellings Computer Services Ltd

Supporting TV screen displays.

As a spin off from the development work on Embedded RISC OS, RISC OS Ltd will shortly be releasing a new version of the RISC OS 4 ROM sets - RISC OS 4.05.

RISC OS 4.05 will provide support for Interlaced screen modes in PAL and NTSC on both Risc PC and A7000+ computers.

RISC OS 4.05 ROMs will be available as an upgrade for RISC OS 3.7 ROM users for £120 inc VAT and postage. If you already have a RISC OS 4.02 ROM installed then the 4.02 ROMs may be exchanged for a RISC OS 4.05 ROM set for £60 inc VAT and postage.

However, this release will be of little benefit to the majority of users, only those in the TV and video industry, primarily users of the Millipede Professional Graphics system, and other users who have been unable to utilise the Alphalock systems, due to changes to the memory map and page tables between RISC OS 3.7 and RISC OS 4.

RISC OS 4.05 does not offer any new features beyond those already included in RISC OS 4.02 (ie none of the features found in RISC OS Select), but does include some improvements from later versions of RISC OS, that were previously featured as ROM patches including:

• Configure, the 'Help' menu option no longer gives an error.

• BASIC fix for assembler LDRH instructions which previously would be erroneously reported as syntax errors.

• DDEUtils fix for applications attempting to use throwback when no throwback handler is present.

• DOSFS fix for -'s in filenames.

• Fix for disc names with invalid characters in them (eg, <>'s and wildcards).

• InternationalKeyboard now supports additional countries. Use Ctrl-Alt-F12, followed by Alt-<number of international dialling code for country> to select a different country.

• ShareFS correctly informs remote machines of changes to local drive.

• ParallelDeviceDriver (if enabled) fix for using certain printers, including the HP2100.

• BandLimit A7000+ machines will now be able to select higher resolutions.

• ROMPatches corrects a minor problem with SharedCLibrary 'qsort' and 'strcoll' that causes some applications to crash.

• Corrects a rare problem with WindowManager that may affect small windows at the bottom of the screen, and for filters on a small subset of applications.

• Ensures that the initial Filer window opens in the correct position.

• Corrects minor problem with Resolver.

• Slider fixed for non-eigen matched screen modes - it used to scroll off the screen sometimes, and fix for incorrect Help messages.

RISC OS 4.05 is expected to be available from early March 2003. For further details or to place an order please contact:

RISCOS Ltd
3 Clarendon Road
Cardiff
CF23 9JD
Tel: 02920 492324
Fax: 02920 492326
sales@riscos.com

Wireless Networking

A Range of Wireless networking devices allowing RISC OS and PC machines to be networked without having to lay cables etc. All products comply with IEEE802.11b and interwork with other compliant systems.

Wireless USB adaptor: plugs into RISC OS machines fitted with Simtec USB card. Stack based on acclaimed NET100 code.

Wireless USB adaptor: £79.95. PC version (no RISC OS drivers) £69.95

Wireless Access Point / Bridge / Media Converter: This versatile device allows single machine or groups of machines fitted with network cards to be integrated into a wireless network.

Wireless Access Point / Bridge / Media Converter £99.95inc

Wireless PCMCIA Card: For use with Portable machines: £59.95inc

Wireless Broadband Router: Please ask for details

cordless (pictured) £29.95. PS2MouseMini interface required. Laser trackballs are should be taken not to look into the laser beam. Please observe warning labels etc.

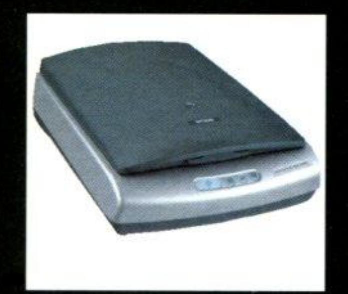
In association with: www. **RISCOS-USB**.com



Simtec USB card

Provides USB expansion to RISC OS machines

£79 + del + VAT = £99.95inc
4 port hub £10 with card (£20 alone)



Epson 1660 scanner

USB scanning at true 3200x1600dpi

Scanner only £179.00
TWAIN and scanning software £35
SPECIAL OFFER: Scanner, USB card and FREE TWAIN and Scanning Software: £278



HP USB Printers

High quality printers which attach to the Simtec USB card.

HP3820 USB printer: £120inc
HP5550 USB printer: £170inc

Complete with RISC OS drivers.

COMING SOON with USB from STD
USB Pen drives; USB MP3 players;
Zip drives; Joysticks; SEN interfaces



Stuart Tyrrell Developments
PO Box 183, OLDHAM OL2 8FB
Tel: 0845 458 8803 / 01706 848 600
Fax: 0870 164 1604 (national rate)

Email: info@stdevel.co.uk
http://www.stdevel.co.uk
All prices include VAT and P&P
Switch/Visa/Mastercard welcomed.

Powerbase upgrade

Two new versions of Powerbase and revised documentation in Impression, Ovation Pro, PDF and HTML formats have been released onto the Powerbase website. The HTML appears for the first time.

Versions are 9.12DA and 9.12SH and are functionally-identical. The former (using dynamic areas for memory management) is compatible with RISC OS versions 3.5 to 4.33 (and probably v.5 on the Iyonix, although there has not been an opportunity to test this). 9.12SH uses a 32-bit compatible version of the sliding-heap module for memory management and is compatible with RISC OS 3.1, as well as with later versions.

Powerbase can be used to create databases of information of almost any kind and provides powerful facilities for maintaining such databases and for selectively retrieving and printing information from them.

Using Powerbase at an elementary level is particularly easy, you can, for example, set up a simple address-book database in a matter of minutes, yet the needs of more advanced users have not been neglected.

Descriptions of Powerbase from various sources have sometimes implied that it is a relational database. It isn't, but it can provide you with some of the facilities which fall outside the sphere of a simple flat-file (card index) type of database and for which a relational database program might otherwise be necessary.

It is best described as a flat-file database with table-validation. This means that text fields within the database can be linked to a list of items in such a way that the field will not accept items unless they are on the list. That list (called a validation table) can have many additional columns providing extra information which may be included in printed reports from the database if required.

The Powerbase Web site is at **www.pendle.ukgateway.net/**

New 32-bit block drivers

In order to aid the development of 32-bit variants of the well-known Serial BlockDrivers, X-Ample have put up a support page at:

http://www.xat.nl/en/riscos/sw/bd/

Downloads for all the block drivers can be found here, including a new 32-bit version of InternalPC for use on the Iyonix PC.

!ArmSort v3.20

ArmSort is a module which implements a *Sort command which provides BASIC programmers with very easy and fast facilities for sorting arrays.

ArmSort caters automatically for any number of any type of single or multiple dimension BASIC array, in any combination of Integer, String or Floating Point arrays, in any key sequence. It also has flexible parameters and comprehensive error checking.

ArmSort is fast as it uses the Shell Sort technique in ARM Machine Code, and it is therefore very capable of complex sorts on large data volumes. On a StrongARM Risc PC this can take about 28 seconds for 50,000 elements. An Iyonix PC takes about 10 seconds for the same sort!

Full details are available from **www.avisoft.force9.co.uk** where it can be downloaded as a 34k ArcFS archive file.

Pace reports heavy losses

UK set-top box manufacturer, and RISC OS Intellectual Property owner, Pace Micro Technology has posted heavy pre-tax losses of £15.9m for the last six months ending November 30 compared with a profit of £22.2m for the same period last year.

Turnover at the company decreased by 61% to £83.4m compared to £215.8m in 2001 and its gross margin halved to 12.7%.

Shipments in set-top boxes fell 45% to 651,000 units and the company noted that despite the introduction of its hard disk drive and high definition technologies which are both in their early stages, the fall has been compounded by a substantial fall in average selling prices.

Sir Michael Bett, chairman of Pace, said: "We expect to see some recovery of performance in the second half of the financial year, compared to the first half in terms of revenue and margin improvements.

"Competition remains strong and there continue to be market uncertainties. However, with our leading edge technology and focus on lower products costs we remain in a good position to secure new business."

According to the company statement, the UK market declined sharply with revenues falling 66% to £65.0m although its market share remained stable at 50%. Pace has attributed some of the decline to a reduction in orders from UK operators, ntl and Telewest as well as a fall in shipments to Sky Digital which has completed transferring its analogue customers to digital subscriptions.

Unfortunately for Pace, any commission on RISC OS 4 and 5 sales make little dent in their finances.

RISC OS on your wrist?

Microsoft has unveiled new ARM-powered wristwatches that will be linked to a new wireless network to deliver custom-tailored data. The watches will allow sports scores, weather or traffic information to be streamed continuously to different "channels" on the device.

The watch will be able to tell the wearer the best route home or figure out how to pack for an out-of-town trip. The watch will also be able to receive the wearer's personal calendar sent from a personal computer (Windows no doubt!) and instant messages sent through Microsoft's messaging service. The Microsoft watches, made by Fossil, Citizen, and others are expected to be available late this year and cost $100 to $250.

Unfortunately for us, the watches will run a new Microsoft operating system and come outfitted with tiny computer chips and radio receivers. They will be connected to a wireless network that Microsoft is cobbling together by leasing existing FM radio spectrum in the US and will require a $10-$15 per month subscription. Initially, the watches will work in 100 U.S. cities covered by the network. Microsoft hopes to later deploy other tiny devices, such as alarm clocks to refrigerator magnets.

User group meetings

Surrey and Sussex

The February meeting of Surrey and Sussex Acorn User Group will take place

on Monday 10th February at 8:00 pm (tea and coffee from 7:30) and features guest speaker Paul Vigay. Paul will be describing the RISC OS Academy initiative, and how it can help you get the best out of your computer.

SASAUG meets in the lounge of Horsham Methodist Church, London Road. There is an adjacent car park and the railway station is only ten minutes walk. Visit www.poppyfields.net/sasaug for a location map.

Wakefield RISC OS Computer Club

At their February Meeting to be held on Wednesday 5th Feb, the Wakefield Club will have John Cartmell talking about Acorn Publisher and some of the challenges involved with publishing magazines using RISC OS machines.

For full detail, check out the club Web site at **www.wrocc.org.uk** and take a look at the events page. Visitors are welcome at all meetings for a small entry fee. Meetings start at 7:45pm.

BARUG

Upcoming meetings of the Bristol group are :

6 February - Annual General Meeting

26 March - Iyonix presented by Jack Lillingstone

DARC

DARC (Derbyshire Area Risc Club) are delighted to welcome Jack Lillingston to their February meeting. Jack, Managing Director of Castle Technologies, will be introducing the Iyonix PC. This is a not-to-be-missed opportunity to quiz Jack on the product and his hopes and aspirations for the RISC OS market.

The meeting is on Monday 10th February and starts at 7.30pm at the Parish Hall, St. Alkmunds Church, Duffield, (just off the A6 north of Derby) Derbyshire. Tea, coffee and biscuits are available during the evening. There is ample free car parking. A map is available on the Club's website at **www.darc-comp.org.uk** or e-mail **darc@aaug.net**

Bottisham

BAUG, the oldest established Acorn/RISCOS Group, now in their 21st year hold two meetings per month. Upcoming dates are :

February 11th - A Problem solving evening

February 25th - PhotoDesk : a practical Tutorial

March 11th: To be advised

March 25th: To be advised

Southampton

Southampton meeting dates are:

February 10th

March 10th

Essex Boys (and girls)

Essex Acorn User Group will be holding the following meetings in February and March:

11 Feb 2003 "Video-Editing" - an internal presentation.

11 Mar 2003 "Networking" - a look at an actual network.

Email: eaug@aaug.net

Web site: **www.wattys.fsnet.co.uk/eaug/**

Other 32-bit upgrades

32-bit compatible versions of MW Software Freeware titles are now available from their Web site at **www.mw-software.com/software/freeware.html**

- GhostScript 7.03 - PostScript interpreter
- GView 1.40 - PostScript previewer, front-end for GhostScript
- RasMol 1.40b - molecular graphics visualisation tool
- XChars 1.10 - advanced character picker, tahe !Chars in RISC OS Select
- DiscSpace 1.20 - graphical disc usage display
- AppDock II 2.50 - NeXT style application launcher

100 million text messages

More than 100 million text messages were sent in the UK on New Year's Day. It is the first time the number of text messages in one day has topped the 100 million mark, according to Mobile Data Association research. It marked a 59% increase on the same period in 2002 and more than twice the 2002 daily average. Mike Short, chairman of MDA, said: "The large amount of text messages sent at New Year confirms that most people see text messaging as a warm and personal way to greet their friends and loved ones on special occasions.

Buy parking permits by text

Viennese motorists can now buy parking permits by text message on their mobile phones. The facility claims to be the first in Europe and has led to meter-free parking zones. Drivers register their mobile phone and license plate as well as their credit card details to sign up for a virtual parking permit account.

Parking permits can then be bought by sending a text message with the desired length of stay. The driver immediately receives a text message back confirming the number of the parking permit. A particular advantage of the system is the fact that drivers receive a text message 10 minutes before their permit expires.

Italians know more about IT?

The Italians say they're the most proficient technology users in Europe. A Harris Interactive study found that 54% of Italians think they're familiar with all or most of the features on their technology products, compared to 47% of Germans and 39% of U.K. IT users.

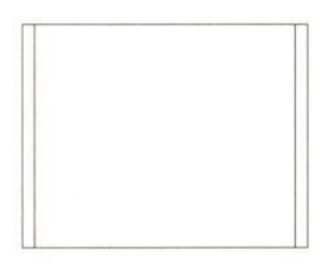
The Spanish are the most confident when it comes to setting up a PC, with 50% of respondents claiming proficiency in this area. In the UK, the figure is 40%. But the Italians struggle here, with only 26% saying they're able to get a PC up and running.

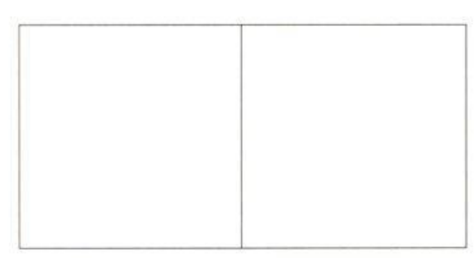
Taking the first set of figures and then the second I think the truth becomes clear.

Stick a disc in

Compact discs have become one of the most popular storage media now that both the discs and the recording devices have come down in price. The hardware and software has come within reach of most computer users, and now more home-produced CDs than ever before are being made.

Whether you use CDs for storing data, making music albums, photograph collections, CD-Roms or whatever, specially-designed inserts for jewel cases can make all the difference to your presentation.





The Templates

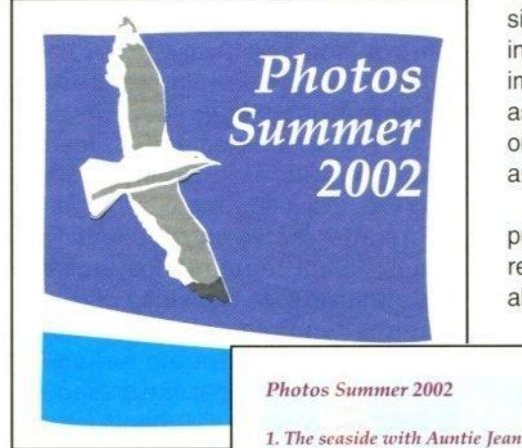
First, we need to create template files which will serve as the start of every set of CD inserts you'll make. You can use whichever application you prefer: Draw, Artworks, Vantage, Impression, Ovation, and so on; anything in which you can draw accurate rectangles (with Draw you'll either have to make use of the grid function, or download Drawbox from www.kang.ukgateway.net).

There are two items we'll produce: what I call the booklet (or front cover) and the tray insert. I'd suggest making them two separate files.

Starting with the booklet, for this example purposes we'll use Draw. Open up an A4 Drawfile and select Misc-Paper limits-Landscape. Also switch the grid on and lock it (Grid-Lock). We need a 120mm square, so we'll start by drawing such a square, and use a thin line (Style:Line width:Thin). Move it to the right hand side of the page and copy it. Zoom in on the top left corner (press Shift and use Adjust to select the area you want to zoom to) and line the two squares up so that one is exactly on top of the other.

With one box selected, go to Transform-X scale and type in minus 1. This is your basic template for the booklet. You may need to select both squares and move them to the middle of the page so that they're within the print margins.

The tray insert isn't quite as simple, but it's not difficult. The first rectangle you draw should be 138mm width by 118mm height. Now add a flap on each side measuring 6.5 by 118mm (you may have to unlock the grid to line them up exactly). This is your basic template for the tray insert. Keep both of the files you've created as master files, and copy them for each new CD design.



Photos Summer 2002

1. *The seaside with Auntie Jean*
2. *James's barbeque 4/7/02*
3. *Trip to London*
4. *Miscellaneous pics*
5. *Andy's wedding*
6. *The cottage - August*

All photos by Henry Bloggs using a Sony Mavica MVC-FD7

BLOGGS PLUMBERS

The Booklet Design

The front cover, the right-hand box on the page, allows you the most freedom when it comes to design, as the only thing you might feel you must have on the front is a title for the CD. Go wild if you like: use a photo to cover the whole area, or some clip-art, or establish a design which can be used for all your CD covers, and simply change elements to distinguish one CD from another. If you use an image to fill the whole box, use text on top of it which is going to stand out; if it's a dark image, use white or light text.

The back of the booklet, the left-hand box on the page, is where you'll put a list of the contents of the disc. A quick way to give an attractive look while still making the text legible is to reproduce the front design, but wash the colour out so that it's a ghost image of the original. In Draw, select individual colours and play around with the slider bars in the colour picker. It's easier with something like Impression, where you could just double-click on the image, select Colour map... and use the slide bars to adjust the colours to your requirements. Whichever way you do it, the informational text should be able to be read easily. You could also add your personal or company logo.

Photos Summer 2002

Tray Insert Design

The main panel of the tray insert could repeat the design of the back of the booklet, or include more information if that's what you require. The side panels of the tray insert are just as important, if not more so, as these will be all that's on display when the CDs are stacked.

Here's where you can put the title, your indexing reference, and your logo, albeit in a reduced form.

The left panel should read from top-to bottom, the right panel from bottom to top. You could reproduce an element of design from the front cover if you like (for example, the background colour), but remember that the text should be clearly readable.



Once you've designed one panel, simply copy it, rotate it 180 degrees and place it over the other panel. You may then have to adjust any parts which are upside down (in our example, the index number "9"). That gives you an introduction to CD insert design. With experience, you'll discover the best design for you.

Nigel Gatherer
graphics@acornuser.com

Squeezing 26 bits out of 32

The Aemulor began life early last year as a conversation between myself, and a good friend, Adrian Lees. Having been shunned by RISC OS Ltd offering his help with the 32-bit conversion of RISC OS (for free, I might add) he decided to start work on some code that would allow existing 26-bit applications to be run on a purely 32-bit processor.

It was at Wakefield 2002 that we were discussing the future of RISC OS. One of the more common excuses for not having a purely 32-bit RISC OS seemed to be that it wouldn't run any existing software. Given there was no apparent progress at that time in making RISC OS fully 32-bit (although I knew Pace had an almost fully 32-bit version in-house) Adrian devised a solution that would remove that barrier. Various pieces of low level code were borrowed from previous, mostly unreleased programming projects, and the beginnings of a 26-bit emulator were born.

It was later in the year when we discovered Castle's "top secret" project, and managed to attend their developers' day in October when we were astounded by a room full of working XScale machines all running a 32-bit RISC OS.

I immediately called Adrian who fortunately had the time available to work full time on turning his code snippets into a commercial version of the emulator, and the project was born.

What started out as a simple X-Scale emulator, has turned into an highly complex piece of software, with 26-bit interpreter, JIT compiler, SWI translation, module handling, CLI interception and much, much more.

The name

Before I could start work on a Web site, promotion and publicity, we needed to decide on what to call it. Because of the commercial nature of the product, any name could not infringe on any existing trademarks and copyright rules, and also must reflect the nature of the product.

"ARMulator" and "ARM26Em" were considered possibilities, but ARM Ltd ruled out any name that contained the word "ARM". I decided to switch language, and checked out the Latin translation of "emulate" - which turned out to be "aemulor", which actually means "to emulate, be like, or to rival".

What it does

Aemulor consist of several parts. Firstly, the heart of Aemulor is a "virtual CPU" core. This CPU gives us the 26-bit instruction set required to run 26-bit applications. The actual CPU we emulate is a crossbreed of StrongARM and ARM600 to give us the broadest compatibility. This has the additional advantage that we can also run some software that is not StrongARM compatible, so there are several packages that run on Iyonix PC under Aemulor which don't even run on a StrongARM Risc PC.

The interpreter core behaves exactly like a regular CPU. It reads each instruction, decides what action is required and then performs the appropriate action.

Most SWI calls can be passed directly onto RISC OS itself for processing on the native 32-bit XScale, which means the more of the OS an application uses, the more of it will be running natively even when running under Aemulor. This gives a huge performance boost against running both the OS and application under emulation (such as running a complete copy of RISC OS 4 under emulation on RISC OS 5) and also allows 26-bit applications to run alongside 32-bit ones, as opposed to a "RISC OS in a window" type approach.

Running 26-bit and 32-bit applications side by side is achieved because WIMP applications communicate with each other, and to the window manager, via WIMP messages. The WIMP has no idea if the message is from a 26-bit or 32-bit application (it doesn't really care either). This allows drag and drop saving, for example, between natively running 32-bit Draw and 26-bit Impression running under Aemulor.

A JIT compiler addition to the interpreter core is currently being tested, although may not end up being included in the first release of the software. This examines the code that Aemulor is running, and watches for frequently executed code sequences. It then takes these routines, and dynamically compiles them into native 32-bit machine code, which is then used from then on when those code sequences are encountered again.

This method can give enormous speed increases for loops and redraw code that gets executed many millions of times during an applications' lifespan, but can slow down other code, as there is an overhead in checking whether compiled code exists for a particular memory address.

26-bit Modules

Because RISC OS 5 contains no support for 26-bit modules of any kind, we must handle all of these ourselves. Aemulor can load and run any 26-bit module (excluding modules contained on Podule cards, but more on that later). Aemulor can intercept the OS_CLI calls to load application code and modules, which makes running this type of code, under Aemulor, transparent to the user.

Aemulor makes all these modules, most of the 32-bit modules in the RISC OS 5 ROM, and any soft-loaded 32-bit modules available to all applications running on the virtual CPU. This allows applications that are running under Aemulor to take advantage of native 32-bit modules running under RISC OS 5. A prime example here would be running Artworks under Aemulor, but using the 32-bit rendering modules as supplied by Martin Würthner.

There are however a couple of exceptions to what modules can be used. Firstly, the SharedCLibrary supplied in RISC OS 5 has no APCS-R support at all, so Aemulor "hides" the version in ROM from all 26-bit applications, and soft-loads the 26/32-bit version as supplied with the latest C/C++ toolbox. Although identical in function, the soft-loadable version retains support for the older 26-bit APCS-R application calls.

BASIC

The other exception is BASIC. Because 26-bit applications may

contain 26-bit assembler, Aemulor needs to be able to intercept these, but not impact the performance of regular BASIC applications. The way that we achieve this is to load our own copy of the BASIC module supplied in RISC OS 5, and dynamically patch it to call Aemulor if any incompatible assembly code is encountered.

The version in ROM is then hidden from all applications running under Aemulor, and our patched version used instead. Because of our advanced patching routines, this allows any future version of BASIC to also work without any modification of Aemulor, and allows applications that don't contain any assembler to run natively at full speed. This has already been tested by an update BASIC module having been released by Castle that continues to work fine under Aemulor.

Virtual RMA

Because of memory map changes that have been made in RISC OS 5 to allow larger wimpslots, the standard RMA has been moved into high memory (ie above the 26/32 bit 64Mb boundary). This means that our Aemulor module can't use regular RMA workspace to run the 26-bit module code being emulated, because all 26-bit code has to be run below 64Mb (26-bit addressing can only address up to 64Mb of memory) Aemulor gets around this by creating its own virtual RMA below 64Mb using a dynamic area, and then asking RISC OS to move it to low memory.

OS SWI call emulation

There have been a number of SWI call changes between RISC OS 4 and 5 to support 32-bit memory addressing. If an application weren't aware of these (and assuming the application actually could run natively on the XScale) this could cause it to crash when calling one of the modified SWIs.

The main changes to SWIs are that when running under RISC OS 4, a SWI could accept a memory or buffer location and flags combined into a single register. This was fine under a 26-bit OS as the 32-bit register could quite easily contain both the 26-bit address, with 6 bits left over for any flags.

Under RISC OS 5 however, the addresses are all 32-bit, which leaves no room for any flags, so the SWI API changes that have been made split the flags out to use a separate register from the address. Aemulor provides a RISC OS 4-like API to applications running under it, so that registers may contain both addresses and flags. These are then split, and passed onto the OS using the new xxx_32 SWI calls using separate registers for the address and flags.

Other RISC OS 5 API changes, such as no longer being able to pass values less than -1 to the RISC OS Window Manager SWIs are also catered for transparently, where all negative values are changed to be -1 before passing the SWI call onto RISC OS 5.

SWI Flag preservation

Another OS change that has occurred under RISC OS 5 is that flags are no longer guaranteed to be preserved across SWI calls, as was the case under previous versions of RISC OS. Aemulor solves this issue by preserving the flags itself for the application before calling the SWI, then restoring them after the SWI call returns, which again provides a RISC OS 4-like environment for the application.

Limitations

Because Aemulor doesn't emulate an entire set of hardware (for example, an entire Risc PC or A7000) there will always be software which doesn't run under Aemulor that does on real 26-bit hardware. These will mainly be software that expects certain hardware to be present, primarily IOMD and VIDC, neither of which are present on the Iyonix PC. However, it is mostly games and graphics demos that rely on IOMD and/or VIDC (even though the screen memory is still accessible which means many games could still work). As such, the initial release of Aemulor is mainly targeted at RISC OS desktop applications.

With the Pro version of Aemulor (planned for later this year) we hope to remove one limitation of the Iyonix PC hardware, in that there are no 2, 4, or 16 colour screen modes. This is a limitation of the NVidia PCI graphics card used, and while does not present a problem for the majority of desktop applications, many games, and other specific applications such as Sibelius can only run in these lower colour screen modes.

26-bit code running from a podule is also not supported, as Podule code gets loaded very early during the OS initialisation, and if not found to be 32-bit, won't get loaded by RISC OS. As Aemulor will never get loaded until well after the OS had booted (even if installed into "predesk" inside your !Boot) we will never get the opportunity to intercept this process and load the modules into Aemulor.

We will look at addressing some or all of these current limitations in the Pro version of Aemulor due to be released later this year.

Electronic delivery

Aemulor will only be available via the Internet. Both I and Adrian feel strongly about conservation of our planet's resources, and distributing Aemulor via purely electronic means fits in with these beliefs well. Because the Internet also provides an ideal mechanism for illegal software distribution and piracy, it also meant adding some copy protection into the software. Hence, each copy of Aemulor is unique and will only run on the MAC address of the Iyonix PC that you specified when you purchased it.

I hope this delve into the history and technology behind Aemulor gives you an insight into one of the finest piece of code to appear for the Iyonix PC. Let's hope now we have new powerful hardware, and a 32-bit OS, there is much more to come!

For more details of the OS changes in RISC OS 5 visit www.iyonix.com/32bit/ For more details on purchasing Aemulor, or to download a demonstration copy, visit **www.aemulor.com** or ask your local RISC OS dealer.

Neil Spellings
neil@spellings.net

Get 'em on a list

ou may have heard hype about fantastic response rates from e-mail marketing, and it is possible to achieve, but how? Low response rates are a result of cheap, poorly maintained lists being offered from unscrupulous sources.

A good list does not automatically mean a great response rate, you have to be aware of other factors such as the offer, the timing, the price and so on, but it goes along way to achieving those high response rates we have all heard about.

Here are some typical questions that I am asked about e-mail address lists, which I have attempted to answer in order to shed some light on the subject.

How is an e-mail list compiled?

In the same way that any good direct mail data is compiled, b2b (business to business) e-mail addresses are collected through the process of telemarketing, subscription and surveys. Consumer e-mail addresses tend to be collected as a result of visits to specific interest or hobby Web sites, where lifestyle information is collated on registration.

Who supplies the e-mails?

E-mail addresses can be rented through specialist e-mail solutions providers, traditional list brokers, or directly from the owners or managers. The list owners are normally the organisations which compiled and now maintain the list from which your selection will be taken.

Many list owners deal directly with the end-user, although the vast majority will appoint an exclusive agent known as a List Manager. Most List Managers will have several list owners in their portfolio, often with complementary lists.

A word of caution: e-mail list owners and managers will rarely, if ever, recommend a list outside of their portfolios. E-mail list brokers however are different. They are the user's representative from whom an end-user can expect advice on good e-mail list selections, applications, and so on. Recognised brokers have a commission-sharing agreement that enables each of them to access any lists managed by any of the List Owners/List Managers.

Some brokers are stronger on consumer e-mail and others on business lists. Some also have international dealings. Choose your broker carefully.

Before attempting to rent an e-mail list, be sure you understand the various selections which may be offered to you. The price you pay depends on the combination of selections you order.

List brokers will want you, the end user, to issue a brief. The broker's interpretation of your requirements will be a reflection of the brief. The more comprehensive the brief, the more accurate and detailed will be the list proposal.

A responsible e-mail list broker will take your brief and respond in the form of a List Proposal. This will include essential information about the e-mail list. A typical brief and proposal can be downloaded at: **www.ukmarketingmanagement.com**

What is the quality of e-mail addresses?

Assuming that the e-mail broker has all the relevant information they should be able to get a good match to your requirements. No list whether e-mail or traditional mailing lists are 100 per cent accurate, but if you put in the preparation work this will eliminate wasted communications to disinterested people.

Responsible e-mail brokers will use reliable sources who maintain their e-mail addresses to the highest standard. Many will put in writing the procedure they use to ascertain the e-mail address, and also vouch for the authenticity of the claimed Opt-in status. I will get list owners to sign an affidavit to back up their verbal claims. If nothing else, it is a measure of the confidence with which the list owners view their own data.

Prior to broadcasting, many will "ping" their file, sending out a message that determines whether an e-mail address is still alive. They will also over-broadcast to ensure that if you pay for 10,000 e-mail addresses that your message gets to 10,000 people. Responsible owners also ensure any bouncebacks and fails are excluded from future e-mail broadcasts, and will then go through the verification process to ascertain a new contact e-mail address for the recipient.

Good e-mail brokers know which list owners take the quality issue seriously and which don't. It will almost always pay to use a broker rather than approaching a list owner direct.

Why can't I have them to broadcast my self?

The only lists you should consider renting have an opt-in status. This means that the recipient has explicitly agreed to receive third party promotional e-mails from the list owner. If the list owner was to release the e-mail addresses to third parties, they would lose control of the messages being sent.

Who broadcasts the e-mails?

List owners often have the facilities to broadcast themselves, but as often as not they will contract a large specialist broadcaster to send your message on their behalf. This way they don't have the bandwidth, bounceback, and failure issues.

How do I know that a broadcast has been done?

Some broadcasters are able to provide results real time through logging on to dedicated Web sites. Others will issue reports via e-mail direct from their servers. Typically you will get results telling you:

- How many e-mails were sent
- How many live connections were achieved
- How many bounced back or failed
- How many recipients opened the message and therefore the open rate
- How many recipients clicked through on each link and therefore the click-through rate
- How many unsubscribed from receiving further e-mails from you.

You should always insist that you are seeded on the file so that you will see the transmission when it happens.

What do I do now?

Things can go wrong but don't be put off as there are now a number of good e-mail consultancies and management companies that can walk you through the process, and hopefully avoid the pitfalls. They will take you through the process from concept to completion, sourcing the right list, negotiating a price, creation of html, broadcasting the message and tracking and reporting the results.

So the first port of call is to go and get a good company to help. I recommend talking to a broker not an owner. Then ask questions. Don't be afraid to ask for things in writing, this often sorts the wheat from the chaff. Issue a List Broker brief, and make it detailed.

Concentrate your efforts then on good creative, short, concise and attractive communications. Then sit back, allow the broker or consultancy to do their work. There are no guarantees in this world but you can be safe in the knowledge that you have done everything possible to ensure your initiative has the best chance of being successful.

John McCabe
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www.ukmarketingmanagement.com

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CB1 2LX, UK.
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T:+44 (0) 117 949 0561
E:www.webchange.co.uk

StrongArm Systems
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Timsbury, Bath BA2 0QQ
www.strongarm.info

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Coventry, CV6 6GR,
+44 (0) 24 7666 1001
E: www.microbit.demon.co.uk



78 Brighton Road, Worthington,
West Sussex, BN11 2EN
T:+44 (0) 1903 523 679
E: www.preid@enterprise.net

Getting connected

Due to pressures of work Mike Cook was unable to put together the next article in his series on the Castle Technology USB driver this time around however all should be back to normal next month. In the meantime we will take a look at the Simtec end of the USB connectivity spectrum.

Probably the easiest to use and most tested interface for the USB is the C API. Although a set of SWI calls and drivers can be written in any language required. Acorn C compiler (tested with version 5.06) may be used to produce both application and module type driver. Current limitations at this time mean GCC cannot be used to produce module drivers.

The C library is provided as a set of header files and several AOF binary library files. These link objects have been compiled with both module and application link options and for debug and non-debug versions. In addition there are two further options, either fastlib or stdlib. These options are an attempt to reduce the calling overhead of function calls that ordinarily pass through the SWI vector a "fast call" method has been provided, to use this "fast call" all that is required is to ensure the USB library initialise is called (must be done in any case) and link against either the stdlib for SWI based calling or the fastlib for direct calling.

Drivers broadly fall into one of two categories:

- If the driver is intended to be "long running" and possibly provide for an entire "class" of USB devices such as a HID driver for a keyboard and mouse. It should be written as a module (as the example driver is). This modules initialisation process will set up communications with the USB core using the messaging system and it will be informed of devices being plugged and unplugged on the bus as they occur.
- If the driver is intended for "short term" use or a specific device it only has need to be started when a device is plugged in, such as an mp3 player, camera or a scanner, it may be written as an application.

The Simtec USB system provides two mechanisms for an application driver to obtain device information. The driver may be started by the USB system when a device is plugged in obtaining the attached device information from its command line, or it may obtain a list of connected devices which are unclaimed when it is run.

This type of driver is obviously only available when there are filesystems to load drivers from, typically after system boot, and are hence only useful for devices not needed to start a system.

Application drivers are the simplest drivers to implement. The USB side of their implementation probably represents a small part of the total code that will be written. The general areas that need to be considered are:

- The suggested approach for locating a device is that a driver should parse its command line using *usblib_parse_cmd_line (USBLib_ParseCmdLine, SWI &56340) looking for a new device message and if that does not exist (driver not run by USB system) use the usb_devmgr_find_free (USBLib_DevMgrFindFree, SWI &56340) calls to find and then claim the device. This simply obtains the new device message by either means and gives the driver writer the flexibility to have their driver started by the USB system if they require. The command line scanning may be omitted if required.
- Once a device has been located the information in the message can be used to open pipes, and configure the device as required. Most drivers allocate several URBs (data buffers for communication) at this point to use throughout the driver's lifetime, this is especially useful if the control pipe has been opened and the driver is likely to be sending a number of control messages.
- The driver will then proceed to issue transactions as required using the pipes it opened during its initialisation phase.

All resources including references must be suitably freed or dereferenced as appropriate. If this does not happen resources may be lost and become unavailable until the USB system is restarted. Care should be taken to release the device back into the unclaimed device pool and ensure all URBs are freed otherwise the driver will not be able to obtain the device for use a second time.

Driver initialisation

When a USB device is attached to a port, either on the host controller or on a hub the USB system performs several actions:

- Configures the USB address of the device.
- Reads the device configuration.
- Checks that power and bandwidth requirements do not exceed available resources.
- Creates the necessary USB resources for the devices reported configuration.
- Searches for an appropriate driver to handle the device.

Each USB device carries identification information so device drivers can identify if they are suitable or not. The USB committee define class, sub-class and protocol codes in the relevant standards. The device also carries a unique manufacturer and product code for additional identification.

The system searches for a device driver by:

- Sends a message to all listening handlers for a driver for a specific vendor and product ID.
- Searches the driver path (if set) for a driver for a specific vendor and product ID
- Sends a message to all listening handlers for a device driver for a general class.
- Searches the driver path (if set) for a device driver for a general class.

If nothing claims the device it is marked as unclaimed and kept for future drivers to claim. Once an appropriate device driver is located the search does not continue.

Only module-based drivers can have a message handler and hence only this form of device driver may be sensibly loaded before the device is connected. This makes module drivers ideal for operation where devices are required to operate the system, are inserted and removed often or need to operate outside a multi-tasking environment.

Application drivers have fewer constraints on their environment than modules but are more limited in their use. Application drivers can either be run by the USB system when a device is connected or can claim the device from the unclaimed pool when the driver is started by the user.

Vincent Sanders.

The Making of a Web site

In issues of Acorn User over the last few months we have spent quite a bit of time looking at the many different aspects of having and developing Web sites from a marketing viewpoint.

In this article, instead, we are going to

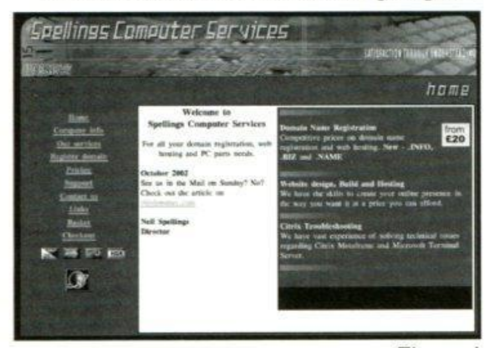


Figure I

look at how three different Web sites have been developed with RISC OS tools and some of the pitfalls you need to watch out for. Of the three sites, the Wordsmith, my personal site and, to a lesser degree, the Acorn User Web sites, two are hosted as professional sites and one is based on Freeserve.

Hosting

The two "commercial" sites are hosted by Spellings Computer Services (**www.spellings.net**). Neil Spellings not only runs this company, recently appearing in the Mail On Sunday as the epitome of good business financial management, he also writes the news pages for Acorn User and has written several of the articles explaining Web Hosting and related issues.

[1_Spellings]

If we were using a PC to develop Web sites there are, of course, a massive

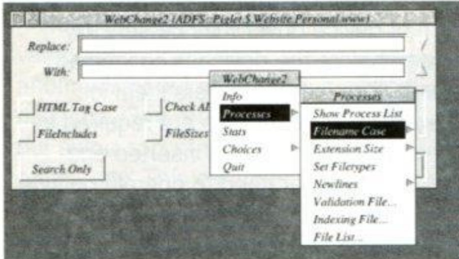


Figure II

range of programs for creating and editing fancy sites. From the ones that allow you to tweak the code by hand to those that do it all "wysiwyg" even though technically that has no meaning on the Web. Plus you could create Flash presentations and dozens of other extra-special features which look good but don't necessarily add anything, in fact they may well detract from the site.

On RISC OS we have fewer options, you can use Edit and hand-code the whole thing or use the "wysiwyg" SiteMaster which, despite its slightly non-standard interface, still makes a good application.

The first incarnation of the Wordsmith Web site, for which we have thankfully have no images, was created using an early version of R-Comp's HTMLEdit which allows easy generation of hand-coded HTML, just allowing you to use menus and control keys to enter the most commonly used HTML tags. My family Web site had been created a couple of years ago using the same program and was recently overhauled.

A key difference between free Web space, such as offered by Freeserve, and paid-for hosting is that you don't usually get server support in the form of programming languages like PHP on free sites.

Thus my personal site is kept simple with discrete pages and a non-graphical format that makes the individual pages very fast loading. However one important factor I was after was the ability to have headers and footers as standard. This presents a real problem when you have as many pages as I do on this site: it contains the diary pages for my two charity bike rides as well as individual sets of pages for other members of the family. Changing a standard header feature would result in changes to 50 or more pages.

Plus I wanted to have the "this page was last updated on 'dd mmm yyyy'". When you are updating a Web site it can be hard to remember to change the dates as well. So I needed automation.

[2_WebChange]

Enter WebChange from Softrock Software. This application allows you to put special comments into HTML code containing directives, you then run the site through WebChange which follows those directives. This is what the full version will do:

•Include other files, allowing you to create standard headers and footers in your HTML, or include other standard pieces of text, there's no limitation. It's also recursive so include files can include other files.

•Enter the date a file was last updated, this can be any file, you just specify which one, or the special "ThisFile" which refers to the file currently being processed. This directive can be combined with the Include directive so it can appear in an inserted footer, you only have to type it once.

•You can also insert the size of a file. This becomes very useful if you have

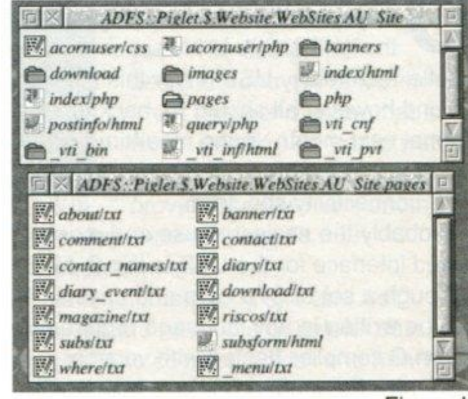


Figure III

JPEGs or Zip files that others can download. The directive can be used to automatically insert the size of the file so that the user knows what to expect. Plus it means that if the filesize changes you just have to run the whole thing through WebChange again and the information gets updated automatically.

•You can ask WebChange to check the ALT text in image tags, and if it is missing it will insert either the words "Picture" or "Image", or it can insert the leafname of the file being referenced.

•If you need it WebChange will alter (and standardise) the use of upper or lower case in your HTML tags. This can be useful if you've taken over a site and you don't like what the previous owner did.

Other things you can get WebChange to do are:

•Send the whole site for validation;

•Change the codes used for newlines

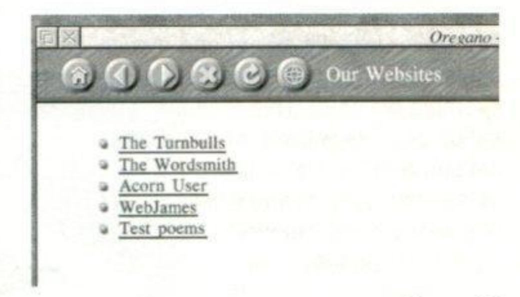


Figure IV

between CR (Mac), CRLF (PC) or LF (RISC OS), or even LFCR. CR is code 13, carriage return, while LF is code 10, line feed;

•Change the case of filenames referred to in the HTML;

•Remove or add file extensions as either 3 (PC) or 4 (Unix/Linux) character extensions

•Set the RISC OS filetypes on files with extensions;

•Finally you can do a general search and replace on any string with or without wildcards throughout an entire web site.

This was certainly powerful enough for my personal site and essential bearing in mind there was no way to have programming except as Javascript and I don't know Javascript yet.

WebChange is available at **www.webchange.co.uk**, there is a limited downloadable version, otherwise it costs just £15.

PHP

If you have Web hosting that gives you access to a programming language you are in a very good position to come up with some very clever and versatile pages. in addition you can potentially save space.

PHP is a free language that is supported by most hosting services and when people talk about Web Programming they are talking about PHP, Java and Javascript. Or the PC-only ones. And others.

The ones mentioned here are cross-platform and they all have their differences plus their good and bad points.

Java and Javascript are what you might call client-side languages. That is to say that they have their effect when run as languages on the machine that has downloaded the Web pages: The client machine.

PHP is a Server-side language, which means that all the processing is done before the Web page gets downloaded to you. Now that processing can create pages that have, for example, Javascript in them. So these things are not necessarily mutually exclusive but the complexity could be a barrier.

In fact just PHP can occasionally be confusing, this is because you are dealing with three levels:

• You have the PHP programming language. This language is used to create HTML pages. You can imagine that each PHP file is a separate computer program that gets run on the Server.

• As it is run it creates a Web page which gets sent to the Web browser.

• The browser processes the page and displays it.

While it is true that each PHP page is a separate program you can actually pass information between the pages in a couple of ways. But as this isn't a PHP tutorial I won't go into that.

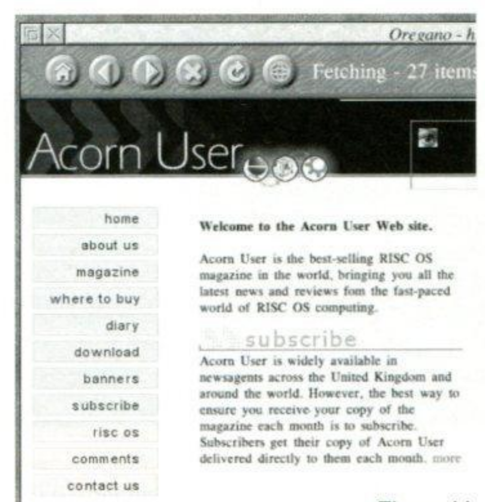


Figure V

With PHP you can also do the file dating, file inclusion, file size that you can do with WebChange but it happens on-the-fly. PHP is a full programming language and very like C in the way it is

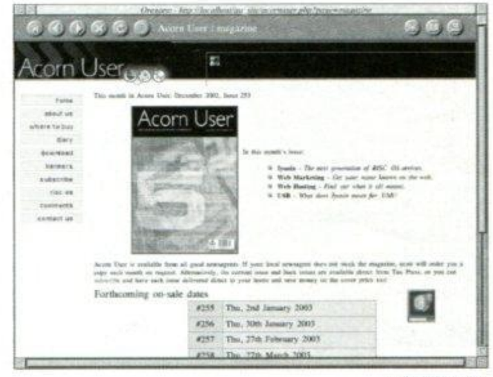


Figure VI

structured and written, as a C programmer it took me only a couple of hours to get to grips with it, then it is just a matter of learning the functions to do what you want.

You might get the idea that you have to be online while you are developing the site. Luckily this isn't true, if you get hold of WebJames along with PHP you have



```
<h5>Forthcoming on-sale dates</h5>

<?
  $t_base  = strtotime("7 Nov 2002") ;
  $t_issue = 253 ;
  $t_week  = strtotime("+4 weeks") - strtotime("now") ;
  $t_count = 13 ;

  while ($t_base<time()) { $t_base+=$t_week ; $t_issue++ ; }
  $t_base-=$t_week ; $t_issue-- ;

?>
<CENTER>
<TABLE WIDTH='50%' BORDER='0' CELLSPACING='1' CELLPADDING='4' BGCOLOR='#808080'>
<?

  for ($i=$t_count ; $i>0 ; $i-- ) {
?>
<TR>
<TD BGCOLOR='#D4D4D4' ALIGN=CENTER VALIGN=MIDDLE>
<? echo ("#".$t_issue) ; ?> </TD>
<TD BGCOLOR='#E3E3E3' ALIGN=LEFT VALIGN=MIDDLE>
<? echo date("D, jS F Y",$t_base) ; ?> </TD>
</TR>
<?
  $t_base+=$t_week ;
  $t_issue+=1 ;
  }
?>
</TABLE>
</CENTER>
```

Figure VII

everything you need to write and test PHP pages. Not every library function is available, although the current developer, Alex Waugh, will include other libraries if you particularly need them.

WebJames is available from **www.alexwaugh.com**

Acorn User

The Acorn User Web site was redesigned and re-launched about a year ago with a limited amount of PHP which was used to include the standard headers, footers and the page menu down the side.

[3_AcornUser]

It also uses cascading style sheets which is another area I personally had not studied. So any changes that were to be made needed to be done so that this feature was not touched. This did not prove a barrier since the HTML coding to use the style sheet was contained in the standard header.

In the original site, although PHP was used for top-and-tailing the pages, there was no other use of it. Also in common with many PC based sites all the pages were held in the top level directory, which to my programmers mind is untidy.

[4_localhost]

Often with Web pages you will see parameters being passed in the URL, when you see something like this:

`www.bloggs.co.uk/page.php?text=drains`

the bit after the '?' contains the parameters which can be accessed by the next page being called. Since we have one standard page and only the content really changes I created a single main 'php' page which uses a parameter to specify the content contained in the 'pages' directory. The parameter is then also used to give the name of the page in the title.

[5_AUsite]

To get that parameter we have a file called _menu/txt which contains the names of the main pages, and this is used in the menu at the side of the page by using PHP to read the file and create the entries. In fact each entry is a graphic which means that adding new ones isn't just a matter of changing the _menu/txt file.

One little frill that I did add here was that the menu entry for "magazine" is omitted if we are on the magazine page. In some ways this was only to check that it could be done, and it was just a simple piece of coding.

[6_magazine]

Also on this page there is a table of magazine numbers and on-sale dates. This is actually generated completely from code which starts from a known base date and then counts forward comparing with the current date. Once the current issue is established it

displays the table containing the date information.

[7_Dates]

The important thing to remember is that if you actually examine the code downloaded from the Web site you won't see the PHP, all you see is the finished table, the processing is done at the server end.

```
<?
  $file = fopen('pages/contact_names.txt','r') ;
  while (!feof($file)) {
    $name=trim (fgets($file,30)) ;
    $addr=trim (fgets($file,60)) ;
    echo '<TR>' ;
    echo ('<TD><P>'.$name.'</P></TD>') ;
?>
<TD><P>
<SCRIPT LANGUAGE="JavaScript">
<!-- Begin
<?   echo ('jemail("'.$addr.'", "acornuser", "com") ;') ; ?>

// End -->
</SCRIPT></P></TD>
<?
/*   echo ('<TD><P><A href="mailto:'.$addr.'">'.$addr.'</A></P></TD>') ; */
    echo '</TR>' ;
  }
  fclose($file) ;
?>
```

Figure VIII

Protect yourself

Then there is the issue of Spam. On a Web site you must have a way to let people contact you, but if you put an e-mail address on your Web site it won't be long before you get deluged with spam messages offering you wonderful opportunities.

This is the case with the Acorn User Web site and was the case with my personal one until we changed our ISP and domain. (That in itself can be quite a wrench because you are cutting communication lines with people who know you through the other site, and the search engines who used to know where you were.)

Both these sites had originally been put together in innocence and we suffered the consequences. In the case of Acorn User we still suffer since we have kept the same domain. However the quantity seems to have stabilised.

If you do suffer from horrendous levels of spam and don't want to, or can't, change your domain there is another solution. You allow a third party company to filter your e-mail for you. This requires a lot of trust. For RISC OS users there is R-Comp's FeatherMail service which we will be testing out with Acorn User itself and giving you a report.

However for new or re-vamped sites we need another way out of the dilemma. One method is to put some sort of reply form on the site. This can hide the mailing address on another page which is only accessed by clicking a button (e-mail harvesters don't usually do this) or you can put in some special validation code which your incoming filters can check for and simply delete e-mails that don't have it.

A less complex way is to use Javascript. Now as I mentioned I don't really know Javascript but that doesn't really matter because all you have to do is find an appropriate piece of code that you can insert into your HTML.

The way it works is very simple: rather than insert an e-mail address with a "mailto:" in front of it, you use a Javascript function which, when clicked, takes your e-mail address as fragments and then joins them together to create an e-mail address and uses that.

```
<TR><TD><P>Editor</P></TD>
<TD><P>
<SCRIPT LANGUAGE="JavaScript">
<!-- Begin
jemail("editor", "acornuser", "com") ;
// End -->
</SCRIPT></P></TD>
</TR><TR><TD><P>Enquiries</P></TD>
<TD><P>
<SCRIPT LANGUAGE="JavaScript">
<!-- Begin
jemail("enquiries", "acornuser", "com") ;
// End -->
</SCRIPT></P></TD>
```

Figure IX

This only happens at "click time" so any e-mail harvesters just loading the code and scanning it won't see an e-mail address. Even better is that this code constructs and inserts the e-mail address as it is displayed by your Web browser. This means that on-screen you see the e-mail address even though it doesn't appear in the HTML code.

The original code, which is also combined with PHP, is shown in Figure VIIIa, while VIIIb shows the function that is called and VIIIc is part of the list of contact names generated by the PHP.

```
<SCRIPT LANGUAGE="JavaScript">
<!-- This script and many more are available free online at -->
<!-- The JavaScript Source!! http://javascript.internet.com -->
<!-- Original:  William Rozell Jr (elranzer@nospam.com ) -->
<!-- Web Site:  http://www.elranzer.com -->
<!-- Begin
var user;
var domain;
var suffix;
function jemail(user, domain, suffix){
document.write('<a href="' + 'mailto:' + user + '@' + domain + '.' + suffix +
 '">' + user + '@' + domain + '.' + suffix + '</a>');
}
//-->
//  End -->
</script>
```

Figure X

Next issue we will round up by looking at feedback techniques included and, if you've been following the Web Marketing, methods to generate that virus marketing effect.

Resources

If you are serious about getting your Web site properly designed and marketed there are a number of sites that is worth getting registered with. They are all free and they provide regular newsletters covering important issues.

Grokdotcom.com

This is an interesting site and it's newsletters have lots of helpful data. A recent one covered colour and how it affects the way you are perceived. (Science Fiction buffs will recognise the site's name reference, others can read up on it on the site.)

Marketing Professionals

Again a very useful site (**www.marketingprofs.chtah.com**) with lots of articles and a newsletter with valuable marketing information. This one in particular covers a lot of information about branding and analysing statistical information about your site.

Search Engine Watch

Surprisingly this site (**www.searchenginewatch.com**) keeps tabs on what search engines are up to and once more provide a regular newsletter, though less frequent than the two mentioned earlier. Although less information is provided free on this site it's still useful to know what search engines are considered best and how they currently rank Web sites.

Here's a thought: in HTML the meta keywords tag is now dead, no major search engines use it to evaluate sites anymore. So stuffing your meta keywords tag with lots of vaguely relevant keywords will not have the slightest effect on your position in a search engine listing.

PHP & Javascript

There are tons of resources on the Web of pre-written code in PHP and Javascript. The best way to find it is to simply get on to a search engine and type "PHP code examples" and see where you go.

Steve Turnbull
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Operating System review

On a PC the access to view the directories in Windows is achieved by clicking on "Explorer" or Windows Explorer (not to be confused with Internet Explorer). This can be selected from the Start menu or by a keyboard shortcut Windows key & E, or entering the command "explorer" from DOS or from Start->Run.

Other filing systems such as digital cameras, Zip drives and so on are at the whim of the manufacturer and don't always conform to the same standards as Windows Explorer.

Windows has an annoying feature (in my opinion) in that the latest copied file(s) will appear at the bottom of the list in the Filer window, instead of in their correct position in the sorted order. Though this can be rectified by pressing refresh, but you have to do that every time.

On RISC OS the Filer is opened by clicking on the Hard Disc, Floppy Disc, CD or other filing system icon. Once opened, the filing systems are pretty much identical with the exception that where Windows Explorer displays a tree view of the directory structure in its left-hand window, RISC OS opens separate windows.

Both systems allow sorting of icons by, type, date, size and filename. Dragging and dropping for copying/moving files is available in both systems, though, by default in RISC OS the file will be copied, whereas in Windows it will be moved (unless it is to another media in which case it is copied instead).

In RISC OS dragging a file has the same action whether on the same media or to different, it copies. If Shift is held down it moves the file instead. Copying a file on the same media in Windows must be done via the menu option and is not available by default with a simple drag.

Windows	RISC OS
Toolbar	N/A
Status Bar	N/A
Large Icons	Display->Large Icons
Small icons	Display->Small Icons
List	Display->Small Icons
Details	Display->Full Info
Arrange Icons	N/A
by Name	Display->Sort by name
by Type	Display->Sort by type
by Size	Display->Sort by size
by Date	Display->Sort by date
AutoArrange	Done automatically
Line up icons	Done automatically
Refresh	Done automatically
Options	N/A

Clicking 'menu' on a file on Windows gives:

Windows (Right click)	RISC OS (Menu-click)
Open	N/A - double click on file to do this
Edit	N/A - Shift+click on file to !Edit it
Print	N/A - Drag and drop onto !Printers on task bar
Send to (Mail recipient)	N/A - Email software should allow dropping onto it
Cut (allows cut/pasting of files)	Delete (no cutting and pasting of files on RISC OS)
Copy	Copy (must enter a new name) or drag with Shift
Paste	N/A - drag and drop files
Create Shortcut	N/A - see Shortcuts/batch programs in this document
Delete (goes to "bin")	Delete (utterly, no undelete except with third party software)
Rename	Rename - must enter a name
Properties	Info, Access (sets read/write privileges)
N/A	Count
N/A	Find (see find above)
N/A	Set Type (see set type)
N/A	Stamp - Date stamp file with today's date & time

Other features

Description	Windows (menu)	RISC OS (Menu-click)
Create Folder	File->New->Folder	New Directory
Confirm Delete	always (automatic)	Options->Confirm
Wordy info	N/A	Options->Verbose
Ignore Locks	N/A	Options->Force
Check dates before	N/A	Options->Newer
Display copy info (later RISC OS versions only)	always	Faster/Slower (Faster - no info)
Default directory	N/A	Set work directory

Directories or Folders

The method of specifying directories/folders and file paths differs in both systems quite dramatically, there are fundamental differences. The PC shows its rather older heritage in that media types must be assigned to drive letters and can only be accessed if that has been done.

The drive letter is followed by a colon and then the directory path appears where directories (or folders) are separated by the \ symbol, finally the filename appears which may or may not have a three letter extension which is separated with a dot:

```
C:\Program files\Microsoft Office\winword.exe
```

Drives A: and B: are usually the floppy drives (in the days when you tended to have two) and C: is usually the main hard disc.

On RISC OS the main filing system is called ADFS (Advanced Disc Filing System) which is a development from the original BBC Micro's DFS (Disc Filing System). A full file pathname includes the filing system name followed by two colons, then the media name (or number), followed by the root directory symbol ($, which may be omitted), the directory path which are names separated by dots and finally the filename.

```
ADFS::Harddisc4.$.Utilities.Sound.!Soundgen
```

Additional filing systems can be added easily (well, the programming isn't necessarily easy but integrating them into the operating system is), plus you can add special sub-systems to ADFS which allow it to read alternate disc formats, for example DOSFS allows DOS discs to be read and written via ADFS.

Other typical systems are SCSIFS to allow access to SCSI devices, IDEFS and so on for external hardware. But even more than that you can create what are called "Image" filing systems which can take a specially formatted file and treat it as if it is a filing system media.

For example compression systems like SparkFS, ArcFS and TBAFS all make

compressed files but you can drag and drop files to and from them as if they were, say, floppy discs. In all these cases the Filer enforces a common interface that does not vary at all.

File Associations

Both systems also allow automatic loading of files into the relevant application.

On Windows this is achieved by the three-digit extension to the file name e.g. DOC for MS Word, XLS for MS Excel and so on. These must have been set up previously as an "association" or Windows won't auto-load them into the application.

On RISC OS files must have had their type 'set' and the RISC OS equivalent to file association is a system variable Alias$@RunType. The files are 'associated' on RISC OS, normally by the application having been "seen" by RISC OS which automatically runs a file which sets up the associations through use of Alias$@RunType_xxx variables set by the SET command (where xxx is the hexadecimal type of the file).

More than Run associations can be set up: there are Print, Load, Edit and even Plug-in associations. These can be used to deal with any eventuality, system variables are extremely versatile.

Long file names

Although Windows itself uses long file names, the files can also be accessed by using their short (DOS) names. These names are usually the first six characters of the long file name (ignoring spaces) with an appended number - eg ~1 to prevent duplicates.

In my experience, Windows NT suddenly stops playing the game with long filenames containing spaces. It will suddenly decides that the space is the division between two file names, and won't let you load the file saying that it cannot open each part of the file name between the spaces. Even using DOS 'short names' gives the same problem!

RISC OS 3 caters for filenames of 12 characters long. To get longer filenames on a RISC OS system, programs like !LongFiles can be used or !Win95FS by Warm Silence Software will allow Windows long file names on a PC formatted disc to be read on an Acorn (but you'll additionally need WSS' !CDFS for Windows CD long filenames) if you don't have this, files will appear like 'Progra~1'.

The only problem I've encountered with !LongFiles was with Webster XL, but this has now been rectified by R-Comp. On RISC OS 4 full long name support is available without any fudging.

Command Line

Both Windows and RISC OS allow access to the command line. In Windows this is called DosPrmpt (DOS prompt) or cmd (command prompt). DOS (Disk Operating System) was the original command line interface, which has largely (but not entirely) been replaced by the Windows GUI (Graphical User Interface)

RISC OS systems use * (star) commands, which are compiled or assembled programs that can be run from the command line or an application. An important feature is that the RISC OS command line can be accessed from pretty much any language, or used from the command line environment.

On the Beeb the disc system was called DFS (Disc Filing System) and the actual operating system was called MOS (Machine Operating System), and ADFS (Advanced DFS) appeared on the BBC Master and continued into the "Archimedes" range where it is still used on RISC OS machines, as they are now called.

In RISC OS you have three options to open a 'command line':

New Task option from the Task menu which opens a 'single-tasking' window which runs only the program specified (locking other processes), until Space bar or mouse click closes it.

Task Window, which is akin to the DosPrmpt or cmd option (but slower and reduces use of other applications), is a task window where any command or commands can be entered.

Or you can press F12, where your desktop will be suspended to be replaced with the * prompt, until you enter return on a blank * line.

In addition Obey, Exec and Desktop files all operate in the command environment when they are run.

In all cases on RISC OS you will be taken into the default file system or that which is currently in use. In RISC OS one can change drives (instead of A: for floppy and C: for hard disc, RISC OS drives are :0 for floppy and :4 for hard disc) by use of the Filer type at the command line. For example to change to Zip drive (additional ZIP cartridge drive), view contents and then back to ADFS:

```
*ZIPFS
*CAT
*ADFS
```

Though in fact there are alternatives like:

```
*cat zipfs:$
```

Or even the, now deprecated:

```
*-zipfs-cat
```

Both systems also allow you to run a single command. On Windows it's Start-Run then type the path of your task and any parameters. On RISC OS you menu-select the Acorn Nut (or RISC OS 4 icon) and select "New Task" to run !Edit, menu-click Acorn icon, select new task and enter: Resources:$.apps.!Edit

Copy command

From DosPrmpt (or Cmd) the copy command has a few forms all explained by the following syntax:

copy [drive:][path]\filename.ext [drive:][path]\filename.ext

copy A:*.* means copy everything from the floppy to the current drive selected

copy A:*.* C:\documents copy everything from floppy to documents subfolder on hard disc.

copy A:\photos*.jpg C:\photos copy all jpeg files (extension *.jpg) in floppy subfolder 'photos' to photos folder on hard disc.

The RISC OS equivalent immediately appears more complex, but isn't - *help copy gives it the syntax (the * is provided by the OS , but I've added it here to differentiate from DOS):

```
*copy {object specification}
{object specification} [Options]
```

eg to reproduce the example DOS commands above:

```
*copy :0.$.* :4.$.*
*copy :0.$.* :4.$.documents
*copy :0.photos.*/jpg :4.$.photos
```

The filing system can additionally be added to the above commands e.g.:

```
*copy ADFS::0.$.photos.*/jpg
ADFS:4.$.photos
```

In addition, RISC OS allows simple copy from file system to file system. Similar systems are only provided on the PC if the software vendor provides for it. The following example indicates a copy from ADFS (in this case hard disc, to a Zip drive):

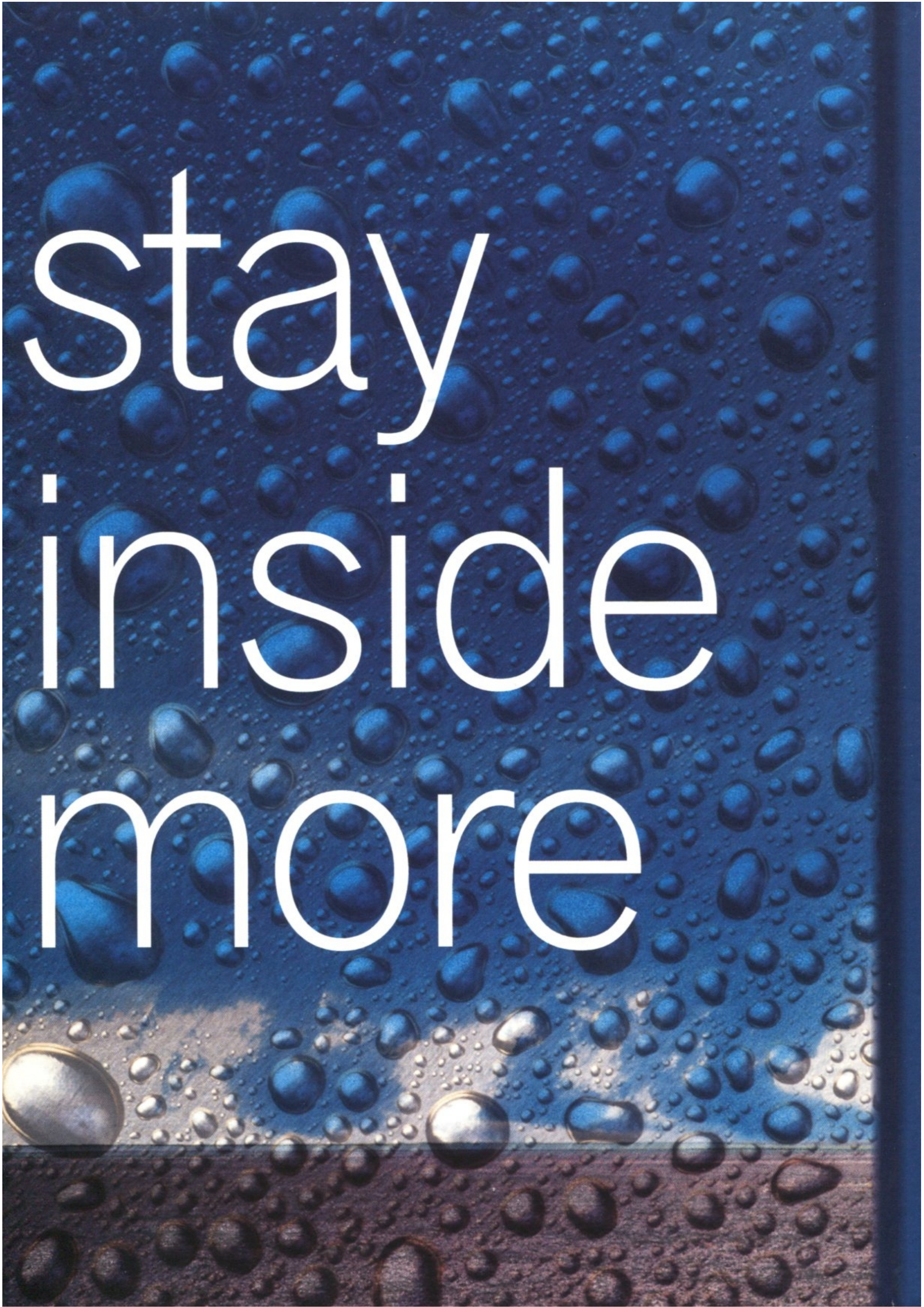
```
*copy ADFS::4.$.filename
ZIPFS::4.$.backup.*
```

The extremely extensive help facilities from the RISC OS command line can introduce you to a lot of other commands some of which can be very useful.

Summary

That's about it on the operating system software side, next time we are going to start looking at the bundled software that comes with RISC OS.

Andy Burgess


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inside
more

Part 13: Tracking media

Over the Christmas and New Year break I spent a good amount of time working on the MediaTrak application. Programming is always done best intensively. As a result the version you can now find on the Web site is way in advance of what I am going to describe here and in advance of probably a couple more issues.

Before we get into any programming we have to go back to school, about a type of relational database linkage that has been mentioned in passing before but not actually implemented. But before we even do that let us look at what it is we are trying to achieve.

We decided that we would have a concept of a "category" (which could be anything) and allow a category to be attached to a "medium".

The reason is simple: If the medium we are dealing with is a video then it will have a movie on it (probably). That movie will have a cast, director, a viewer rating and so forth. If it's an Audio CD it will have music, perhaps with one artist or a band, a music producer. Perhaps you collect episodes of The Archers on audio cassette, these have a cast, scriptwriter and so on. This program could be used to catalogue books or paintings, they have their own categories.

So as a programmer I don't know what categories the user will want to implement and I want to make it possible to have anything.

So we have "medium" records and we have "category" records and any category could be linked to zero or more "medium" records and any "medium" record could be linked to zero or more categories. This is a Many to Many database relationship and is created using an Intersection record.

This is tricky to describe in words but hopefully clear in diagrams so take a look at Figure I. On one side it shows the "medium" records, on the other are the categories. In between you can see the intersection records which point at the two records that they link.

Notice that there is no information in either "medium" or "category" about the linkages, it is all held in the separate intersection record. To create a link between a "medium" and a "category" we just create an intersection record which specifies which records are to be linked, to remove the link we just delete the record. Easy.

One day S-Base will have these database relationships available, until then we have to build them ourselves. All we have to do is create a new file of records which contains three fields, the IDs of the two file types being linked and its own ID (for reasons that will become clear later). See Figure II which also shows three indexes for this file, so we can search by each individual ID type.

FILE A | INTERSECTION RECORDS | FILE B

Figure. I

Query query

In Figure III you can see the three queries that we create in order to cope with the searches that we require: "mclink list" simply lists all the available linkages; "mclink match category" lists only the linkages for a specific category; and "mclink match medium" lists only the linkages for a specific medium.

What is also shown in Figure III, for the first time in this application, is the use of one of the "lines" within a query. It's name "one" is purely decorative and has no meaning, but inside it, in the big dialogue box, you can see a whole range of options.

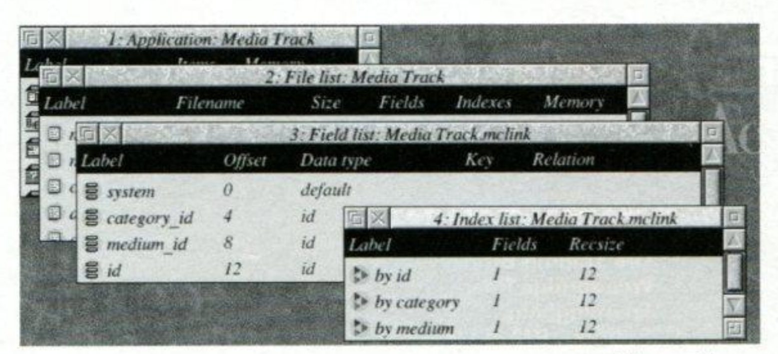


Figure II

The way this works is that, for each line in the query, you can specify a check on one or more of the fields in a file. In this instance we have only chosen the "category_id" field, we have chosen the "is equal to" comparison and specified the variable to use as "c_id". This means that when the query is run every record is checked to see if its "category_id" field is equal to "c_id", if it is then the record is included in the result. If it is not equal then it is not included.

There is a little rider to this, look at Figure IV with the Query basic information, we have specified the index to use when searching the field as the "by category", this is an obvious choice, but notice in the options below we have clicked "Optimise using indexes". What this does is that if the field we are looking for is used in the index it uses this value instead of loading up the record to find the value.

This makes the query search hugely faster as only the index is being checked and we don't have to load every record to check it, in fact we don't have to load any records at all.

There are complications with S-Base indexes which make this an easy game to play if you are using single keys or only want to search on single keys. You run into difficulty however if you want to search for, say, category_id and medium_id at the same time. You might have an index that has both these values and that will work fine.

But what if you want to search for medium_id and category_id? The other way round. Theoretically you just create another index the other way round. But S-Base does an almost Microsoft-like second guess and tries to use what it thinks is the right index instead of what you tell it.

In this example it might not make much difference but in the Acorn User subscription program it makes the difference between an

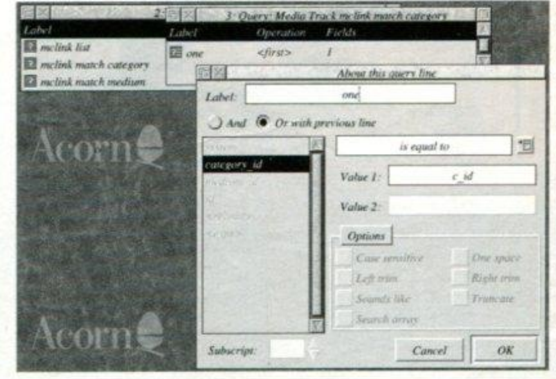


Figure III

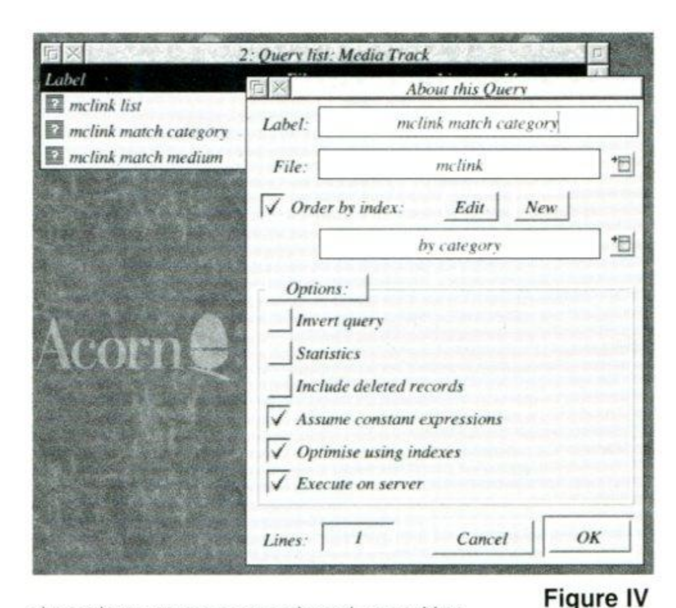


Figure IV

almost instantaneous search and one taking 15 seconds depending on what you search for.

We bypass this potential problem by not using two-key indexes but using two single-key ones, but more of that later.

Into the code

The "mclink" code is registered as a module as normal and Figure V shows the initialisation section. There is something missing in the _poststart phase, it should really check to see that the "medium" and "category" modules are present. But we shall leave that as an exercise for you, dear Reader.

This module does allow things to register with it, including the "backup" module, clearly we need to keep a track of what is being added and deleted, editing is not a function that occurs for these types of files.

Figure VI shows the creation and deletion routines but in this instance we have called them _make and _break because we are potentially making and breaking linkages between other records. I think the code is fairly self-explanatory, in both cases the procedures are given the IDs of the records to be linked or broken.

In the case of link breaking the first thing we have to do is find the appropriate record which is where the two-key search would be useful but we don't risk using it. Instead we run two queries, the first finds all the records that contain the referenced category. Then a query is run to find all the records that contain the referenced "medium".

But notice the slightly different format, a query can have quite a few parameters which added as needed. The first additional parameter refers to the number of times each line of a query should be checked (for reasons we won't go into here), this needs to be at least 1, the second parameter is a query that contains a number of records and if it is present only these records are checked.

So we use the results of the previous query run, in this query run but only have to check a limited number of records, probably less than ten.

On to the next stage, obviously at some point, given a "category_id" we are going to want to know which "medium"s are linked to it. The data is not held in the "medium" record but only in the "mclink" records so we have to use that data, as shown in Figure VII.

As parameters the "mclink_mediumq" takes the "category_id" we are linking to and also a variable to contain the handle of the query containing the search results.

The first thing is kill any previous query held in the handle variable and create a new one and run it. This gets a list of all the "mclink" record numbers that contain the "category_id" we are looking for. The next step is to go through this result and load up each "mclink" record in turn. This gives us access to the "medium_id" we need and we then do a search using the @find function to get the record number of the "medium" record.

This we then file in a query using the archive command, this allows us to store (and return) a whole set of records rather than just one. Finally we put these records into the original query and exit. We have a similar routine for finding all the categories linked to a specific medium.

All the other routines in this procedure resource have counterparts in the objects that we have already looked at.

Category entries

We are going to move swiftly on now to say I have renamed the "subcat" object to "attrib" internally and named it "entry" externally. Unfortunately although "entry" is probably the best name for an entry under a specific category it also a reserved word so we can't use it. The name "subcat" wasn't right because what we have are not sub-categories but actual entries.

The relationship between "category" and "attrib" is another many to many relationship and uses "catlink" as its intersection record. You might ask why it's a many to many, well someone like Michael Douglas is both an Actor and a Director so it is convenient to allow him to appear in more than one category. This applies to others as well: Eminem is a singer and an actor, technically.

In the next issue we will address some of the user interface issues of this exciting new Category/Entry relationship to see how we use it in practice.

```
mclink_appnum = proc app_register_module("mclink")

def proc mclink_init
  mclink_curitem=-1
  dim s mclink_items[MCLINK_MAXITEMS]
  return TRUE
enddef

def proc mclink_startup
  return TRUE
enddef

def proc mclink_poststart
  local ok=TRUE

  if (proc app_isthere("backup"))
      mclink_bunum = proc backup_register_item("mclink")
    endif

  return ok
enddef

def proc mclink_windup
  return TRUE
enddef
```

Figure V

```
def proc mclink_make(c_id,m_id)
  zero mclink
  mclink.category_id=c_id
  mclink.medium_id=m_id
  mclink.id=proc mclink_new_id
  create mclink
  local zr=@record(mclink)
  proc mclink_event("create(zr)")
enddef

def proc mclink_break(c_id,m_id)
  local zr=proc mclink_find(c_id,m_id)
  if (zr)
    proc mclink_event("delete(zr)")
    delete mclink,zr
    endif
enddef

def proc mclink_find(c_id,m_id)
  local zr=0,qa,qc
  query new qc,"mclink match category"
  query run qc
  if (@ext(qc)>0)
      query new qa,"mclink match medium"
      query run qa,1,qc
      if (@ext(qa)>0) then zr=@bget(qa,0)
      query dispose qa
    endif
  query dispose qc
  return zr
enddef
```

Figure VI

```
def proc mclink_mediumq(c_id,return qh)
  if (qh<>0) then query dispose qh
  query new qh,"mclink match category"
  query run qh

  local x,qq,qr,cr=mclink
  local ar=medium
  query new qq,"medium list"
  ffor x=0 to @ext(qh)-1
    load mclink,@bget(qh,x)
    archive qq,@find(medium,"by id",mclink.medium_id)
    next

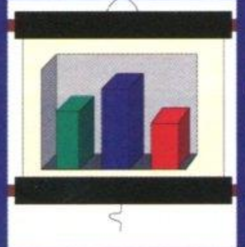
  query clear qh
  ffor x=0 to @ext(qq)-1
    archive qh,@bget(qq,x)
    next

  query dispose qq
  medium=ar
  mclink=cr
enddef
```

Figure VII

Steve Turnbull
stevet@acornuser.com

NOTICEBOARD



PROFESSIONAL

A powerful program for creating and running stand-alone and user-controlled presentations on RISC OS computers. Slide shows or rolling display presentations can be easily created for school, home or business use. Graphics/text/photo pages are made up using scanned images, sprites, drawfiles, JPEGS and HTML material, etc. Sound can be added using a wide range of sources. Programs run on-screen automatically or user-controlled. Large-screen digital projection is another useful option.

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2 MEGAPIXELS

OLYMPUS C220 Zoom **£178**













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Canon Powershot A40	£208	£224	£231
Canon Powershot G2	£538	£554	£561
Canon Powershot G3	£598	£614	£621
Canon Powershot S30	£378	£394	£401
Canon Powershot S40	£438	£454	£461
Canon Powershot S45	£468	£484	£491
Casio QV2900ux	£308	£324	£331
Casio QV4000	£398	£414	£421
Casio QVR 3	£268	see website	see website
Casio QVR 4	£328	see website	see website
Fuji Finepix 2800	£278	£289	£300
Fuji Finepix 6800	£398	£409	£420
Fuji Finepix A202	£128	£142	£153
Fuji Finepix A203	£215	£229	£240
Fuji Finepix A204	£188	£202	£213
Fuji Finepix A303	£258	£272	£283
Fuji Finepix F401	£328	£339	£350
Fuji Finepix F601	£428	£439	£450
Fuji Finepix S304	£338	£352	£363
Fuji Finepix S602	£548	£559	£570
Kodak CX4210	£138	see website	see website
Kodak CX4230	£158	see website	see website
Kodak DX3700	£218	see website	see website
Kodak DX4330	£218	see website	see website
Kodak DX4900	£268	£284	£291
Kodak LS443	£298	see website	see website
Konica KD 3000	£258	£274	£281
Konica KD100	£88	see website	see website
Konica KD300Z	£378	see website	see website
Konica KD400	£338	see website	see website
Kyocera Finecam S3L	£278	see website	see website
Kyocera Finecam S3X	£298	see website	see website
Kyocera Finecam S4	£344	see website	see website
Kyocera Finecam S5	£428	see website	see website
Minolta Dimage 5	£398	£414	£421
Minolta Dimage 7	£658	£674	£681
Minolta Dimage 7Hi	£958	£974	£981
Minolta Dimage 7i	£678	£674	£681
Minolta Dimage F100	£353	see website	see website
Minolta Dimage X	£268	see website	see website
Minolta Dimage Xi	£298	see website	see website
Nikon Coolpix 2000	£178	£194	£201
Nikon Coolpix 2500	£248	£264	£291
Nikon Coolpix 4300	£398	£414	£421
Nikon Coolpix 4500	£518	£534	£541
Nikon Coolpix 5000	£698	£714	£721
Nikon Coolpix 5700	£868	£884	£891
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Olympus C5050zoom	£588	£602	£613
Olympus C700	£378	£389	£400
Olympus C730	£428	£442	£453
Olympus camedia c120	£148	£159	£170
Olympus E10	£798	£809	£820
Olympus E20	£1,098	£1114	£1121
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Pentax Optio 330GS	£248	£264	£271
Pentax Optio 330RS	£308	£324	£331
Pentax Optio 430	£418	£434	£441
Pentax Optio 430RS	£428	£444	£451
Ricoh Caplio RR1	£468	£479	£490
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Ricoh RDC-i500	£398	£414	£421
Ricoh RR30	£228	see website	see website
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Samsung Digimax 350SE	£288	£304	£311
Samsung Digimax 410	£328	£344	£351
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Sony Cybershot DSC-P7	£368	see website	see website
Sony Cybershot DSC-P9	£408	see website	see website
Sony Cybershot DSCS75	£468	see website	see website
Sony Cybershot DSC-707	£867	see website	see website
Sony Cybershot DSC-31	£178	see website	see website
Sony Cybershot DSC-P5	£408	see website	see website
Sony Cybershot DSC-51	£188	see website	see website
Sony Cybershot DSC-71	£278	see website	see website
Sony Cybershot DSC-85	£498	see website	see website
Sony Cybershot U-10	£188	see website	see website
Sony Cybershot U-20	£228	see website	see website
Sony Mavica CD400	£738	see website	see website
Sony Mavica MVC FD200	£428	see website	see website

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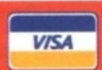
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Ancient sites

Ancient India (**www.ancientindia.co.uk**) is the latest addition to the Ancient Civilisations series of Web sites from The British Museum. Already up and running is Ancient Egypt and Mesopotamia. The newest site explores the culture and history of ancient India and supports the Key Stage 2 curriculum. The Web site present information through narrative, exploratory and interactive modules and contains a Staff Room area where teachers can find background information, discussion topics, printable worksheets and follow-up classroom activities. Look out for sites on Mughal India, Ancient China and Imperial China.

The British Museum is also home to Alfred the lion who welcomes children to COMPASS. This is a Web site which encourages children to explore hundreds of objects from ancient Egypt and medieval Europe to modern Africa. Children can search for artefacts, zoom in, win prizes, play games and print activities, email questions to the curators and send in pictures and stories to the Noticeboard. Just log on to **www.thebritishmuseum.ac.uk/childrenscompass**

Then there is the 24 Hour Museum. This is the UK's National Virtual Museum and uses the Internet to promote UK museums and galleries. On site you'll find news, exhibition reviews, listings, visitor information, collections details, Web links, themed Web trails, a children's section (**www.show.me.uk**) and dedicated sections for museum professionals and teachers.

Updated daily with clear, jargon-free, entertaining news and features. Database information is updated online by museums and galleries and there are search facilities allow you to pinpoint resources, exhibitions and events anywhere in the UK. A built-in curriculum navigator helps teachers, parents and pupils find resources created by museums and galleries in the UK.

British Pathe brought newsreel to cinemas chronicling the huge changes in British society which took place between 1896 and 1970. Now you can access images of sport, news, social history and entertainment by logging on to **www.britishpathe.com**

Helpful CD-ROMS

If you want to find out who the current BECTA accredited ICT service suppliers are there's a CD-ROM to help. The accreditation scheme aims to provide schools with easy comparison of products and services, competitive pricing, constant monitoring of supplier performance and a code of conduct. The CD-ROM provides background information on the scheme and guidance on how to get the most out of the scheme.

Meanwhile, a double CD-ROM ICT: It Works has been released for primary schools. Aimed at school leaders and teachers the first CD-ROM on leadership has sections on inclusion and curriculum online, while the second CD-ROM on teaching and learning provides video material on good practice, ICT and motivation as well as a section on Parents Online.

Broad access

CLEO and notion23 have developed the first in a series of 3D games which uses broadband connectivity to bring high-quality graphics and logic problems to the classroom. Mission to Morecombe is set in the future where players must navigate a robot through an environment of 31 games using thinking skills, numeracy, scientific and literacy skill as well as your knowledge of religious education uncovering scientific and philosophical ideas about the nature of human understanding as you go. You can access this game if you don't have broadband access to the Internet and as well as the game **www.cleo.net.uk** gives you teacher's notes, detailed learning objectives and optional follow-up activities.

Topic web

ACTIS (0115 9448330) now have a range of Project Boxes. Simple to use and packed with curriculum lesson plans and worksheets, Project Boxes are available across a range of curriculum subjects and topics, **www.projectboxes.co.uk**

Working in groups pupils are assigned roles and log into the secure message system to receive their instructions. The computer becomes a powerful interface, delivering a steam of information which commands total involvement in solving the problem. As the situation evolves and more information becomes available, students must combine all their deductive skills to generate theories. As the pressure mounts they must find solutions and then prepare and deliver their reports within tight deadlines.

Practical ideas

THE IT Learning Exchange (020 77535092) has developed Practical ICT for Foundation to Year 6. Covering classroom organisation, pre-computer activities and teaching strategies key techniques and ICT skills are developed ensuring progression and highlighting curriculum links. Available in separate packs you can buy a school set for £200 or a year group pack for £35. Each pack consists of five detailed activities, work files and how to sheets for teachers and older pupils.

Creative writing

There's nothing like publishing work to enthuse children to write and **Creativewriting4kids.com** does just that. Brainchild of children's author Antony Lishak it uses the web to present children's work to a wider audience. There is unlimited space where they can upload work on to their own password protected pages. They can then access their stories from home or the local library computer.

FREE resources

BIGPicture Interactive produce online resources for a variety of clients but all linked to the National Curriculum and they're looking for schools who'd like to work with them to develop future sites. You can contact them via **www.bigpictureinteractive.co.uk** in the meantime have a look at some of their free sites:

Engie Benjy
www.engiebengy.co.uk
Works with the CiTV program and is particularly good for shape, space and measures for 5 to 7-year olds.

Ordnance Survey MapZone
www.mapzone.co.uk
Teaches basic mapping skills for Key Stages 2 and 3. There's a homework help section which includes interactive, animated information, engaging tests and fun activities. There are also downloadable worksheets and mapping tools to help you make your own maps.

Cancer Research UK
www.newyearsresolutions.org
Developed to inform users about how to reduce their risk of cancer, this microsite contains games and activities which convey a serious health message. A good resource for Key Stage 4 PSHE.

Jim Spraggs
jim.spraggs@another.co.uk

RISC-y Security

Network security in education has not traditionally been a concern for those with RISC OS systems. With an operating system held on ROM, a write-protected hard disc, and immunity from the majority of viruses and trojans currently circulating the Internet, RISC OS users can be take comfort from the fact that they are running a system ideal for education.

But this does not mean that schools using RISC OS machines are impenetrable by the nasties of the Internet. Since its inception in 1994 Navaho Technologies has been working with the RISC OS market.

Originally, Navaho was a server system written to run on a RISC OS system. It provided a filtering web proxy, e-mail and web server and web-based applications such as web mail. The roadmap for the product was to provide a complete system, which allowed you to securely connect your network to the Internet, without the need to be an expert in all the technologies involved.

Eventually, it became impossible to provide all the features required by such a system on a RISC OS based system, so Navaho was ported to the Linux operating system. This allowed us to greatly enhance the feature set, without compromising its ease of use. Although the system itself no longer runs on RISC OS, it still supports RISC OS-based clients. The server configuration is performed via a web browser, and the server itself supports industry standard protocols such as IMAP, HTTP, HTTPS and SMTP and so on.

Some of our oldest customers are still running an almost 100% RISC OS based network, and it is thanks to them, and the time that they put into developing the product, that we can offer a product that so closely matches the needs of the education sector.

Since the beginning, we have listened to the needs of the schools we support, implementing features that they have requested, actively involving them in the development of the product. This relationship continues to this day, allowing us to hone the product to the unique requirements of a school. It is perhaps a little ironic that developing a product intended for use in education has given us a product highly sought after by the commercial sector.

It is now very rare to see a 100% RISC OS network. Many of the RISC OS networks we deal with usually have a non-RISC OS operating system running on the servers. Without doubt, it will be these systems that will demand the most of your time. This is simply because in most cases once your RISC OS machines are set up, there is little more that you need to do to them, as they are almost maintenance free. The story can be very different for your servers.

We are seeing a rise in the number of attacks on school systems originating from inside the school network. Most of these attacks are perpetrated by enthusiastic students using tools readily downloadable from the Internet, and do not require a huge amount of IT knowledge to use. Unfortunately, the security of your servers is not the topic of this article, but here are a few pointers that can help you protect them:

- Make sure you have a secure room where you can access your servers. It is a very bad idea to log on with administrative rights on the open network. Children are great 'Social Engineers', and it only takes a few seconds of access to your machine to break the network wide open.
- If you have multiple accounts (e-mail, personal logon account, and so on), make sure that each account has a different password - a super strong logon password for your server is no good if it's passed across your network in plain text, because it is the same as your e-mail password.
- Keep the software versions on your non-RISC OS machines up to date. Many security breaches use a long-patched security hole to gain access to a system.
- Keep an eye on your systems - even the smallest change on your system can indicate a break-in. All too often a small, unexplainable change on a computer is put down to a 'Ghost in the machine', and left at that.

Categorised web site blocking statistics							
Pornography :	59	Violence :	12	Racisim :	4	Drugs :	27
Gambling :	2	Weapons :	12	Illegal :	6	Tasteless :	23
Jobs :	0	Property :	0	Ecommerce :	0	Finance :	0
Webmail :	17	Chat Rooms :	28	News :	0	Search Engines :	0
Sports :	0	Entertainment :	0	Jokes/Games :	0	Dating :	6

Filtration Statistics based on Category (blocks)

User security

Increasingly, schools are enabling Internet access for pupils and staff, opening up a wealth of learning information, but also increasing school's responsibility for effective control and monitoring. While everyone involved in the Internet is educated on filtering and its benefits, it is in no way 100% effective, and many schools remain unaware of the implications of its misuse.

The use of the Internet in schools is receiving a lot of press coverage at the moment. This is usually because a parent has complained that their child has come home with inappropriate material in their school bag.

"At Navaho, we are seeing the beginnings of a new and disturbing trend. Many parents assume that if a child pulls down pornography from the school's Internet connection, then it must be because the school has not effectively implemented a filtration system.

"They will state that their child was sitting at the computer, and these pictures simply popped up, printed themselves out, and forced their way into the child's homework folder! We have started to receive a number of calls, where the school is being forced to demonstrate the surfing behavioural habits of individual users, to prevent litigation from parents."

To assume that a filtration system is there only to protect your students would be a mistake. Any child who is bent on breaking through an Internet filter will do so; it is simply a matter of perseverance as there are no filtration systems out there that are 100% effective.

What can you do?

An Internet firewall is intended to make it difficult for an intruder to access your systems from across the Internet. No firewall can be 100% secure, so the job of the firewall is to make sure that the risk/difficulty in breaking into your network is not outweighed by the value of the resources behind it.

Internet filtration should work in the

same way. If a user can test out the filtration system with little to no risk of being caught, then it may as well not be there. In order to have an effective system, you must also have a way of tracking a user's activity. As soon as you can track usage to a user and/or a machine, accessing inappropriate material on the school network is simply not worth the risk.

What does Navaho do?

Navaho records every item of data that passes through the system. The systems log what was requested, and by whom. The system also records which machine (IP address) the request came from, what time the request was made, and whether or not the request was successful. Navaho also logs the to and from addresses of all emails that pass through the system.

The logs can be configured to cover any time period you wish, assuming you have the necessary disc space. By default the server will record each individual's accesses for six months. This type of logging on its own is not enough to implement an effective control system, who has the time to trawl through what amounts to thousands of lines of logs each day.

Since, as with all filtration systems, our filters are not 100% effective at eliminating inappropriate material, we use the comprehensive logging system to work along side the filters. If a user tries to access pornography, it is very likely that the filters will catch the request. When the filters kick in, an internal counter for that user is incremented. When this counter reaches a configurable threshold, the user account is disabled, and an email is sent to the administrator.

Using this system, you do not need to trawl through the logs, as the system will automatically alert you to any wrong-doers. The chance of a user being able to find an inappropriate site, and navigate it without the filters being activated is extremely small. When an automatic e-mail alert comes in you can use the log searching tool to ascertain an accurate picture of that the user has been doing.

When a parent comes in saying 'My blue-eyed boy would never have done such a thing, it must have popped up by accident', you can show them that in fact, their little blue-eyed boy has been trying to get past your system for the last two weeks.

This sort of historical logging is not only there to catch people trying to get past your filters, it can also have greatly help to prove the innocence of a user. I am sure we have all heard the excuse 'But it just popped up there, I was looking for pictures for my sociology project on how women are treated in the former Soviet Union, and that page just popped up'.

Before you are quick to disbelieve the claim, it can happen although most of the time it is simply a weak excuse. The historical tracking can actually substantiate the claim of the user, and that the phrase 'Russian Women pics' was simply a rather bad choice of words to type into the search engine.

It is important to note that this system, despite all the information it can give you, is not supposed to be a 'Big Brother' style solution. We feel that it is imperative that your users are aware of how much information about their accesses to the Internet is available to the administrator.

To set-up a Navaho server covertly would not only impinge on a user's rights to privacy, but would also defeat the purpose of the control systems - they are there to prevent inappropriate Internet access, and the best way to do that is to show your users they will be caught if they try. Should you find yourself in the position of trying to prove that you have done everything in your power to prevent your users accessing inappropriate material, you have the tools at your disposal.

Internet auditing is not just about controlling and monitoring Internet access. The vast amount of data collected by the system can provide you with details on what your Internet connection is used for:

Do the most frequently visited web pages belong to the British Museum, or the Simpsons?

Are your staff hogging all the bandwidth, or haven't they logged on for months?

You can also see what percentage of your external bandwidth you are using, or how much a group/individual user's Internet access has grown over the last year.

These sorts of reports can allow you to justify the costs of your Internet connection (or sort out the viewing habits of your users), and allow you to plan for the future. Remember, if your Internet connection is saturated, you don't necessarily need to spend more money on a faster connection, you may simply need to ban sound files, movies, and so on from being downloaded, it's amazing how much bandwidth you can free up by concentrating downloads to educationally orientated material.

Daily breakdown of usage

	Email Sent		Email Recvd		External Web		Local Web	
Day	Total	Size	Total	Size	Total	Size	Total	Size
Mon 16	7	23.1K	16	223.5K	1953	16.5M	1404	3.4M
Tue 17	7	131.7K	16	215.2K	793	4.7M	1891	8.0M
Wed 18	7	238.1K	12	299.7K	2669	12.9M	7363	33.8M
Thu 19	13	44.9K	11	115.1K	979	6.5M	14903	76.2M
Fri 20	4	18.3K	9	6.2M	274	1.3M	58	9.0M
Sat 21	10	452.1K	5	43.6K	1697	9.2M	1197	12.0M
Sun 22	3	109.9K	4	8.6K	0	0	288	775.8K

Server Statistics (cat)

Email/Web Site filtering	
Number of blocked emails:	83
Number of viruses caught:	97
Number of blocked web sites:	68
Number of blocked secure sites:	5
Number of blocked web pages:	89
Number of user warnings:	74
Number of users disabled:	41

Filtering Statistics (filt)

Contacting Navaho:
Tel: 0870 7034015
Fax: 023 80230812
WWW: www.navaho.co.uk
E-mail: info@navaho.co.uk

Printer predicament

Recently I made some enquiries about buying a new inkjet printer, but I was told that at present there is no new printer that is suitable for use with RISC OS. It seems that RISC OS printer drivers have not kept up with modern developments in printer software, in particular with regard to the interpretation of printer error messages.

Can you please clarify the situation? If what I was told is correct, the situation is ridiculous.

Peter Howard
Cumbria

I am not sure that "ridiculous" is the right word, "unfortunate" might be a better one. The problem is not the printer drivers however, the problem is !Printers.

Even the updated versions cannot cope with any of the new interfacing protocols required to talk to modern printers. However that is not all of the problem, there is also the messages that are passed. In order for this sort of thing to work properly you would have to know all the details of how the printer communicates. This information can only come from the manufacturer and it is not something they generally like to spread around.

But there is a solution: R-Comp's UniPrint application allows networked RISC OS computers to utilise the printer drive on a PC, so if you do own both and they are networked you can just set up RISC OS with UniPrint and get all the benefits of the PC printer interface with whatever printer you choose.

Look forward to a review of this very soon in Acorn User.

Networking with PCs

I have a network of Pentium-based computers consisting of two desktops and one laptop all running Windows XP two of them using the professional version. All the computers access the Internet through NTL Broadband using a cable modem. They are connected together via a 3com super stack switch.

Despite the facilities that I have with the PCs I still prefer my Risc PC 600 running RISC OS 3.7. I decided in the summer to update to a newer machine and in August bought a RiscStation Scorcher having been assured that getting it to run on my network and to access the Internet via the switch and the cable modem was child's play.

When it was first delivered by CTA Direct the CD rewriter was not working and CTA were very helpful in sending me a replacement for it and allowing me to replace it in the machine myself promising me that it would not void my warranty. I tried to set the machine up to work on the network and also to be able to access my old Acorn through its network card. I have failed miserably on both counts.

I tried phoning CTA which is in Manchester and I live in Hemel Hempstead, after several attempts to decipher the explanation that they gave me it was proving too expensive so I tried sending e-mails hoping that if I had the instructions written down I might have more of a chance. But I haven't had a reply, this e-mail is having to be sent from one of the PCs.

Is there anyone who can help me?

R. Paul Arthur-Worsop
by e-mail

We immediately contacted CTA about this and they checked through their records and did indeed manage to locate the e-mails received and their replies. It seems there was a problem in the e-mail addressing for the reply. Everything is now sorted out.

Conversion factor

I have owned a StrongARM RISC OS computer for a few years but I have never been able to bring it to productive use. In fact I am a Microsoft hater and I don't think much of Apple either (although their machines look different and are somewhat more reliable, they always appear much slower but in fact need much less time for installing and maintenance of software), yet for practical reasons I have a desktop PC and an Apple Powerbook.

Basically I need little more than word processing, e-mail (often PGP encrypted) and Internet browsing, and I can do that on both machines with relatively small investments of time and money.

I am convinced that the design of the Acorn computers and RISC OS software is far superior and indeed I would love to get rid of the two machines and use the RISC OS machine instead. However, I have not been able to find the software that would offer me the functionality that I need (full MS Word compatibility, spell check in different languages, dictionaries in different languages, PGP encryption, and so on.) and also I have never been able to find a book on RISC OS (a comprehensive users guide would be great, since I bought the machine used and it didn't come with any books).

I'm just explaining this to you hoping you could tailor the magazine a little bit toward people in my situation and perhaps you can point me in the right direction and tell me where to go to find help (I live in Barcelona and have not been able to find another Acorn user in this area).

Koen Vanbrabant
by e-mail

Tailoring the magazine is tricky, there are readers who have been with Acorn computers for 21 years, while some are new, and we have the full range in between.

However some of your questions can be answered: The Word compatibility is provided by TechWriter (Icon Technology). It is true that it is not "full" compatibility it will not do every trick that Word does. But if you want more than a word processor then you are talking about Desktop Publishing and that is provided by a different, appropriate, package namely Ovation Pro. TechWriter will also spell-check in many different languages.

PGP encryption is provided by the free PGP software that integrates with all major RISC OS e-mail clients and can be used standalone.

I'm sure all your needs can be served by the use of appropriate software, browsing just got a lot better with Oregano 2, watch out for our review very soon.

If these options are really all you need then you can do it with RISC OS alone. Is there any other Acorn User readers in the Barcelona region that can help? Get in touch.

Steve Turnbull
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